the magazine of STANDARDS

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NOVEMBER 1960

the magazine of STANDARDS

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Vol. 31 No. 11 NOVEMBER, 1960

FEATURES

Reinforced Masonry Resists Lateral Forces. *By R. E. Copeland and Harry Plummer* 325

Resistance to blast as well as to other lateral forces, such as wind and earthquakes, is now considered in design and construction of buildings; tests checking the effect of blast have shown good results with reinforced masonry. American Standard A41.2-1960 takes these new developments into consideration in providing information on design and construction of reinforced masonry structures for use by engineers and builders, and in building codes.

Standards for Intelligibility Testing. *By Mones E. Hawley* 327

Lists of monosyllabic words, representing all speech sounds, phonetically balanced, have been standardized for use in testing and evaluating communications equipment and in testing hearing.

New Standard Defines Acoustical Terms. *By Robert W. Young* 329

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Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

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Ruth E. Mason, *Editor*
Margaret Lovely, *Art and Production Editor*

ASA

The Cover: Bell Telephone Laboratories uses standard intelligibility tests (page 327) to check how clearly messages transmitted by telephone under varying conditions can be understood. Here a test is in progress to help evaluate objectionable noise in the telephone circuits and guide the Laboratories' engineers in minimizing the effect of noise on telephone reception.

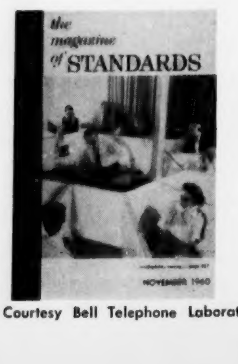

Photo: Courtesy Bell Telephone Laboratories

notes

• Information contained in questions presented during the discussion of MIL-D-70327 at the Spring Meeting of ASA's Company Member Conference have helped in preparing a revised edition of this military drafting standard. This was reported recently in a letter to THE MAGAZINE OF STANDARDS by Colonel Earl T. Wiley, Jr, chief of the Standardization Division, Armed Forces Supply Support Center, Department of Defense. Colonel Wiley said: "I am quite certain that the majority of the questions are answered or at least clarified by the revision of MIL-D-70327."

As a result, the answers to questions presented at the CMC session on military drafting will not be published as had been planned originally. "We will subsequently furnish answers to questions that remain pertinent after revision action is completed," Colonel Wiley promises.

• Standards, traditionally recognized as "tools of management," traditionally also have been considered lacking in drama. Frequently, however, we find standards used as "tools" in some of the most unusual and spectacular of the world's new developments.

This summer AT&T announced plans for using some 50 space satellites to link the entire world in a huge communications network, carrying voice messages as well as other data.

Even before the complications of space, intelligibility has been a problem in presenting a vocal message. Now, standards being developed under the supervision of ASA's Acoustical Standards Board will help solve the problem by providing means for testing and rating intelligibility. First is the new American Standard method of measuring the intelligibility of monosyllabic words (page 327). Second will be a method for calculating an "articulation index," still being considered by ASA Sectional Committee S3, Bioacoustics.

This Month's Standards Personality

S. H. Watson

ONE OF THE "OLD GUARD" whose efforts have contributed so much to the development of the American Standards Association and the success of its Company Member Conference, S.H. Watson (familiarly known as "Sam") is manager of the Corporate Standardizing Division, Product Engineering, Radio Corporation of America. Mr Watson has been a member of CMC since it was organized in 1946 as the Company Member Committee to replace a prewar Company Member Forum. In the reorganization, the Company Member Committee was authorized to exercise responsibility far beyond that of the Forum, and was given machinery for presenting the viewpoint of company members to ASA. The earlier Forum had been what its name indicates—a discussion group. American Standards on performance characteristics of steels, on standardization of gray colors, and on drawings and drafting room practice are some of the projects which grew out of recommendations by the CMC.

Mr Watson was elected a member of the CMC Administrative Committee at the first annual meeting of the Company Member Committee November 22, 1946. He was elected chairman of the committee at the 1948 annual meeting and served in 1949, and again in 1952.

Because of his long experience with the work of the American Standards Association through his affiliation with the CMC, Mr Watson was elected chairman of the committee in charge of the Eleventh National Conference on Standards held in New York in 1960.

Mr Watson has been actively engaged in standardization work since 1944, but had been associated with standardization in connection with volume production design and manufacturing since 1930. He first started work with the General Electric Company, Schenectady, in 1922, where he specialized in calculating weights, stress, and strain. There he entered the GE Engineering School, graduating in 1927. During the time he was training, and for several years afterwards, he was engaged in drafting and design for steam turbines, marine appliance equipment, industrial control instruments and, finally, radio transmitters and receivers.

This last activity led to a change in December 1929, when Mr Watson transferred to the Radio Corporation of America in Camden, N. J. Here he was first engaged in design and field engineering on automotive and aircraft receivers. From 1941 until the fall of 1944, however, he worked as mechanical project engineer on armed forces communications equipment, including altimeters and radar.

In 1944, Mr Watson was appointed manager of RCA's Corporate Standardizing Division.

Mr Watson is a senior member of the Institute of Radio Engineers, and is a charter member of the Standards Engineers Society.

Figure 1. Reinforced brick masonry store in foreground was undamaged in 1954 California earthquake in which many buildings were severely damaged.

American Standard A41.2-1960 offers material on design and construction of reinforced masonry structures for use by engineers and builders, and in building codes.

Figure 2. Reinforced concrete residential structure is shown after it was subjected to 35 kt atomic blast in Federal Civil Defense Administration test.

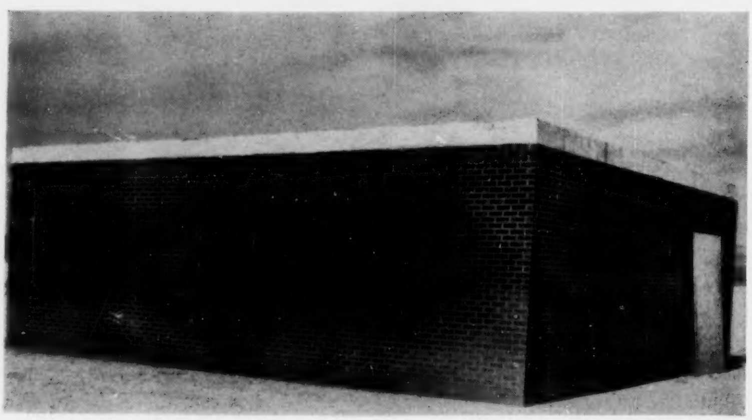

Figure 3. This test structure withstood overpressure from atomic blast of 1,500 lb per sq ft.

REINFORCED MASONRY RESISTS LATERAL FORCES

by R. E. Copeland *and* Harry C. Plummer

Figure 4. Reinforced concrete masonry beam here is being tested for flexing under load.

THE IMPORTANCE of designing buildings to resist dynamic lateral forces is now recognized by architects, engineers, building officials, and building owners to a greater extent than ever before. These forces may be induced by wind, earthquake, or blast.

Action by municipalities to control the damage caused by these forces is comparatively recent.

Following the Long Beach, California, earthquake of March 10, 1933, the California State Legislature enacted a law requiring all buildings for public occupancy to be designed to resist seismic forces. This was one of the first building regulations to establish such requirements. However, since that time, most municipalities in areas subject to earthquakes have adopted similar regulations, in many instances applying to all structures.

In an article, "How Strong Must a Building Be?", George N. Thompson[1] reviewed the development of the 1955 revision of American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1-1955. In this article he states:

"The importance of wind damage has thus been recognized to an extent greater than ever before in connection with building code requirements. When taken in combination with supplementary effects, such as wave action, floods, and loss of service by public utilities, wind damage has become one of the major problems of our time."

Currently, most building codes do not contain requirements for minimum blast resistance per se; however, many architects and engineers are providing some degree of blast resistance in their designs, and such designs are employed by the Armed Forces for many installations.

Reinforced masonry was developed primarily to increase the resistance of masonry to forces that produce bending. As the name implies, it consists of masonry in which steel reinforcement is embedded and so placed to provide resistance to forces that produce tensile and shearing stresses.

Reinforced masonry has been used for the construction of buildings in the United States during the past 30 years. It was first used primarily on the Pacific Coast from which it spread to all sections of the country. During this time extensive laboratory tests have been conducted to determine properties of the construction, and numerous structures have been field-tested by earthquakes and winds of hurricane velocity.

Figure 1 shows some results of the July 21, 1954 intense earthquake in Central and Southern California. The modern store building on the right in the photograph is a reinforced brick masonry structure faced with adhesion-type ceramic veneer, which came through two severe earthquakes undamaged. These structures are located in Bakersfield, an area in which many older structures were destroyed or severely damaged.

Reinforced masonry structures were also subjected to bomb blast in the Federal Civil Defense Administration's Operations "Cue" and "Plumbbob," the results of which have been reported by FCDA and which confirm the assumptions on which their designs were based.

Figure 2 shows a reinforced concrete residential structure after it was subjected to a 35 kt (kiloton) atomic blast in Operation Cue at a distance of 4,700 feet from ground zero, and Figure 3 is a photograph of the test structure in Operation Plumbbob which withstood an overpressure from atomic blast of 1,500 pounds per square foot.

Experimental investigation and the construction of hundreds of reinforced masonry buildings have demonstrated the practicability and economy of this con-

MR COPELAND is director of engineering, National Concrete Masonry Association, Washington, D.C. MR PLUMMER is director of engineering and technology, Structural Clay Products Institute, also in Washington. Both are closely concerned with the development of American Standard A41.2-1960 by Sectional Committee A41, sponsored by the National Bureau of Standards.

[1] Thompson, George N., How strong must a building be?, The Magazine of Standards, March 1956, pp 68-71.

struction. They have also provided the basis for the development of construction techniques and have furnished data from which rational design methods and sate working stresses have been developed.

Figure 4 shows a reinforced concrete masonry beam undergoing a flexural load test at the Engineering Mechanics Laboratory, University of Detroit.

Figure 5 shows a steam-generating plant of the Pacific Gas and Electric Company constructed at Antioch, California, in 1951. In an article of the July 5, 1951 issue of *Engineering News-Record*, Walter L. Dickey, supervising structural engineer, Power Division, Bechtel Corporation, states:

"Reinforced grouted brick masonry was selected for the 89-foot high walls—after studies of several materials—as the most economical, unit type, masonry construction that would resist the lateral loads the walls were required to carry. Low maintenance, favorable installation cost, and pleasing architectural results were factors in the choice of reinforced brick.

"The architectural designers were able to achieve a pleasing effect on exterior walls by combining two surface textures of a commercial building brick; namely, rug-cut and smooth-face. These are supplemented for accent by precast concrete elements. Architectural treatment of the building required narrow 30-foot high slot-type windows generally in groups of three. Mullions in this case were designed as reinforced brick columns the height of the window openings.

"Precast, hollow concrete units involving special, exposed, colored aggregate were used for an architectural band encircling the building. These units were designed as part of bond beams.

"Interior masonry partitions are lightweight concrete blocks with grout-filled reinforced cells. Some glazed structural tile partitions are also used and these are reinforced by similar grouting and reinforcing systems."

The Uniform Code of the International Building Officials Conference (formerly the Pacific Coast Building Officials Conference) has included provisions

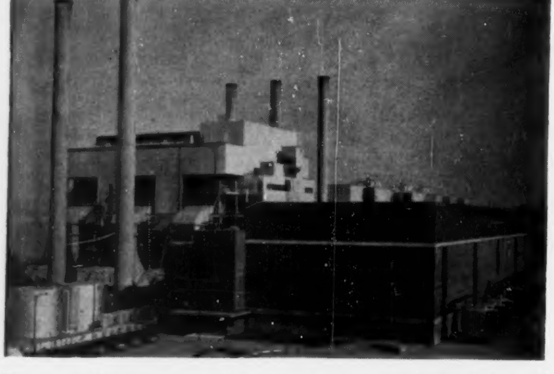

Figure 5. Steam-generating plant constructed of reinforced grouted brick masonry.

governing the design and construction of reinforced masonry for many years. However, these requirements are related closely to seismic design requirements and have not been adopted widely by municipalities, other than in seismic areas.

Since reinforced masonry provides economical construction for many requirements other than seismic design, trade associations representing the masonry industry requested ASA Committee A41 to develop an American Standard on building code requirements for reinforced masonry. This committee is titled Building Code Requirements and Good Practice Recommendations for Masonry, and works under the sponsorship of the National Bureau of Standards. Committee A41 undertook a study of such a standard in 1948. During the succeeding 12 years, seven drafts of the proposed standard were submitted to the sectional committee for review and comment. A consensus of the committee was reached early in 1960 and the American Standard Building Code Requirements for Reinforced Masonry, A41.2-1960, was approved as American Standard in April 1960.[2]

The standard provides recommended building code requirements for reinforced grouted masonry made with solid masonry units in which interior joints of masonry are filled with grout with reinforcement embedded in the grout. It also covers reinforced hollow unit masonry made with hollow masonry units in which certain cells are continuously filled with concrete or grout and reinforcement is embedded.

The standard includes sections on materials, allowable stresses, construction, and design, the latter covering flexural computations, shear and diagonal tension, and bond and anchorage as applied to beams, columns, and walls.

Thus, the standard provides engineers and builders with reliable information for use in design and construction of reinforced masonry structures and offers specific requirements which may be incorporated in building codes. This fills a long-felt need of building officials by making it possible for them to judge whether a proposed design will be able to meet the safety requirements of the code.

Since its approval as an American Standard, A41.2-1960 has been included in its entirety in the revised National Building Code of Canada. It is expected that it will be as widely adopted throughout the United States as the companion standard A41.1-1953, Building Code Requirements for Masonry.

Following publication of the American Standard Building Code Requirements for Reinforced Masonry, the Portland Cement Association, National Concrete Masonry Association, and Structural Clay Products Institute will jointly distribute copies to municipalities throughout the United States with the recommendation that the standard be included in their local codes.

[2] American Standard A41.2-1960 is being printed by the Government Printing Office.

STANDARDS FOR INTELLIGIBILITY TESTING

by Mones E. Hawley

Intelligibility testing measures the communications characteristics which enable listeners to recognize words. Although intelligibility testing dates back almost 50 years, the recently published American Standard S3.2-1960, American Standard Method for Measurement of Monosyllabic Word Intelligibility, is the first standard ever issued on this subject. Sometimes the terms "intelligibility" and "articulation" are used interchangeably, but in strict usage, "articulation" is used only when the units of speech under consideration are nonsense syllables or fragments of words. "Intelligibility" is used whenever the speech units are complete and meaningful words or sentences. Neither term includes the ability to identify the speaker or to recognize his emotional state from the sound of his voice.

Typically, an intelligibility test crew consists of a talker or two, several listeners, a test supervisor, and perhaps some monitors. Using some sort of a speech communication system, the talker reads specially prepared material and the listeners write down the material they hear. Different conditions of the system, different systems, or sometimes different crew members are compared to one another by comparing the number of correct listener responses in each case. Note that no absolute measurements are made.

Although many different textual materials have been used through the years, certainly by far the most popular are the 20 lists of monosyllabic words compiled by the Psychoacoustic Laboratory of Harvard University. Each list of 50 words has been chosen so that all speech sounds are represented approximately according to their frequency of occurrence in normal speech; hence they are termed "phonetically balanced."

In a monosyllabic word intelligibility test each word is presented in a carrier sentence that is spoken at the same level each time. The words are not accented in level or in time; some are louder than the carrier sentence, and some are quieter. A typical test runs "Would you write sing now. Would you write weak now. Would you write fast now . . ." Visual clues such as lip movements are normally denied the listeners. (Dr Pollack of the Air Force's Operational Applications Laboratory has demonstrated that intelligibility can be improved greatly if lip reading is permitted.)

It is possible to divide the uses of intelligibility tests into four categories: (1) speech audiometry, (2) evaluation of architectural designs, (3) evaluation of communications equipment, and (4) research in psychoacoustics. Intelligibility tests are used in the field of speech audiometry to complement pure-tone audiograms and to replace them in some difficult places, such as testing the hearing of small children. Intelligibility testing to evaluate architectural acoustics was pioneered 25 years ago by Dr Vern O. Knudsen of the University of California at Los Angeles. The tests are difficult to conduct, for the acoustics of the auditorium frequently depend on the size of the audience, and the tests are too long to perform with an audience gathered for another purpose. Even more important, objective measurements of the reverberation time and of the source of echoes give better clues about what to do to cure troubles in large rooms.

Intelligibility testing is used more for evaluating communications equipment than for any other purpose. Military material is purchased on the basis of specifications that contain intelligibility tests. Usually evaluations of this kind are required because there is some stress condition in their use which makes speech difficult to understand. It may be that the user has to wear an oxygen mask or shield, or he may have to talk and listen in very high noise levels, or he may have to work at high altitudes that make speech difficult and make headsets behave badly. New methods of speech compression to reduce the bandwidth normally required for transmission of voice signals are also evaluated through intelligibility tests.

Psychoacoustic research on factors affecting speech

MR HAWLEY is with the Radio Corporation of America, Moorestown, N.J. He was chairman of the writing group of Sectional Committee S3, Bioacoustics, that prepared the new American Standard Method for Measurement of Monosyllabic Word Intelligibility, S3.2-1960. Copies of the standard are now available at $1.35.

intelligibility use these tests a great deal. Generally the researchers are skilled in the experimental techniques and can take considerable liberties with the standard method to make it applicable to their problem. In European countries most intelligibility testing is done by telephone laboratories that evaluate equipment. For the most part they use one- or two-syllable words in the native language or in Esperanto. One English laboratory is using a task-solving test in which irregular shapes must be described sufficiently well to enable the listener to recognize them. The shorter the time required, the better the "intelligibility" of the system.

In the United States, laboratories have used such widely different procedures for conducting intelligibility tests that their results can rarely be compared. From 1951 through 1953, Alfred H. Kettler of RCA was chairman of an exploratory committee of the American Standards Association, which studied the possibilities of writing standards for subjective acoustic tests. It was decided that intelligibility testing was not only the most important but the only area in which standards could be written. The most pressing problem was to devise a standard for evaluating communication equipment. The members of the committee chosen to write this standard were: Dr John W. Black, Ohio State University; Dr James P. Egan, University of Indiana; Dr Frederick C. Frick, director, Operational Applications Laboratory, Air Force Cambridge Research Center (now with Lincoln Laboratory); Professor J. C. R. Licklider, Massachusetts Institute of Technology (now with Bolt, Beranek, and Newman); Joseph M. Hershkowitz, U.S. Naval Material Laboratory, U.S. Naval Shipyard, New York (now with Piccatinny Arsenal, Dover, N.J.); Dr Daniel W. Martin, Baldwin Piano Company; Dr F. L. Smith, University of Delaware, Newark, Delaware (now with Naval Research Laboratory, Washington, D.C.); Dr John C. Webster, U.S. Navy Electronics Laboratory, San Diego, California; Dr Gilbert C. Tolhurst, U.S. Naval School of Aviation Medicine, Pensacola, Florida; Mones E. Hawley, chairman.

The purpose of this committee has been to achieve sufficient standardization to permit two laboratories to evaluate the same group of communication equipments with at least the same results insofar as order of rank is concerned. Although the standard has been written around the phonetically balanced word lists, latitude has been given by permitting an experimenter to use any material he likes provided he gives the transfer function between his material and the standard material.

Recommendations have been included for the selection and training of the subjects, but experimenters have been asked to report their procedures. As one member put it, "The chief result of the standard will be to prevent anyone from writing a short report." The thorniest problem has been that of establishing the sound levels for talkers and listeners, and here two conditions are treated. The first is the test in which the subjects are considered part of the testing instrument and not part of the system under test. An example would be determining the relative intelligibility of single and double side-band radio transmission. In these cases the speech levels are essentially fixed throughout the tests. The second case is the test in which the talker and the listener are considered a part of the system under test. An example would be an interphone for fliers wearing oxygen masks and having complete control over the level of received signals. Here the speech level is allowed to vary as it would in actual practice, but the level is always measured. Perhaps the committee's most important act has been to distinguish between these types of measurements.

Procedures for presenting the words, monitoring the levels, and designing the experiment have been recommended, and cautions have been inserted about system usage and the use of recordings.

Standardization is a never-ending job. Now that S3.2 has been published, there is need for investigation of changes and modifications which have been made possible and desirable by recent work in the intelligibility of spoken words and the invention of new devices with which to communicate. The cycle is ready to begin again.

A standard list of "phonetically balanced" words and standard procedures will now help to give reproducible results in testing hearing as well as efficiency of communication systems. Here, a test is in progress.

New Standard Defines Acoustical Terms

by Robert W. Young

An IMPORTANT INSTRUMENT of standardization is the definition of terms. For acoustics, more than 600 terms are included in the just printed American Standard Acoustical Terminology, S1.1-1960. This revision contains 26 percent more terms than its predecessor, Z24.1-1951, and many of the older terms have been reworded to improve clarity or to modify them to conform to current practice.

Nearly half the revised standard is devoted to terms of wide application in acoustics. After a *General* section of 68 terms, a new section on *Levels* brings together many of the terms for quantities for which the decibel is the unit; the definition of the decibel has been revised in recognition of the present-day use of this term for quantities other than power. The single section *Oscillation, Vibration, and Shock* consolidates many of the concepts of vibration physics and technology; this section represents a particular increase in coverage. (Although mechanical vibration had long been within the scope of the standard, the greatly increased activity in the field since 1951 necessitated the addition of numerous terms, many of which actually appear in sections other than the one specifically on vibration.)

The section on transmission–propagation reflects recent work on propagation of sound in both air and water. Concepts related to impedance are now defined in a separate section which also contains new definitions of mobility. Transducers and their parameters now require two sections, in addition to still another very extensive section on specialized transducers used for sound recording and reproduction.

Although the section on underwater sound was expanded percentagewise about the same as the standard as a whole, the number of terms pertinent to this field has been increased relatively more, because many of the new terms are to be found in sections such as those on propagation and transducers; a special figure for "sonar background noise" displays graphically relationships among the many kinds of noise that interfere with sonar operation. The growing importance of sound in industrial processes is recognized by an entirely new section, *Sonics*. Terms now familiar to the business of architectural acoustics have been added to that section. Significant revisions in the section on hearing and speech relate to the testing of hearing, and the section on music contains new material on musical intervals and an extended frequency table. The concluding section on units is primarily a table to facilitate conversion among the units used in acoustics, being now expanded to include British units as well as cgs (centimeter-gram-second) and mks (meter-kilogram-second) units.

The revised Terminology is the culmination of a six-year effort of writing groups whose membership exceeded 50 and the critical scrutiny of members of the ASA Sectional Committees S1, S2, and S3, who number more than 100. Those groups represent all the various branches of acoustical science. In a field as broad as this it is inevitable that two or more definitions apply occasionally to a single term. Such common things as sound, noise, reverberation, and tone require dual definitions. For example, the terminology provides (at least for those who try to understand each other!) two answers to the age-old question as to whether sound exists when a tree falls without a listener nearby to hear it: according to definition (a) of the Terminology, sound is a physical vibration that requires no ear; by definition (b) sound is a sensation that requires a listener.

From "absorber" to "wow," an elaborate index to the new Acoustical Terminology makes it easy to locate terms that have alternate names and composite terms that might be looked for in various ways. The index is indeed comprehensive; it contains twice as many entries (some 1500) as there are words in this brief article!

The revised Terminology is an indispensable tool for all workers in acoustics who hope to communicate with other English-speaking acousticians. It is equally important for non-acousticians whose business requires the specification of acoustical items.

American Standard Acoustical Terminology (Including Mechanical Shock and Vibration), S1.1-1960, is available from the American Standards Association at $4.50.

MR YOUNG, a member-at-large on the acoustical Sectional Committees S1, S2, and S3, is chairman of the writing group, SW-5, that prepared the new edition of American Standard Acoustical Terminology, S1.1-1960. Mr Young is with the U.S. Navy Electronics Laboratory, San Diego, California.

Mr Rice conducts a workshop on standards promotion and program evaluation following presentation of his paper at the Spring Meeting of the Company Member Conference.

STANDARDS PROGRAM

by R. L. M. Rice

PROMOTION AND EVALUATION are two problems high on the list of any standards engineer. This is true whether his standards program is a new or a long-established one; whether he operates in a large or a small company; and whether his standards relate to catalog items, component parts, design procedures, standard practices, procurement specifications, or others.

MR RICE is Standards Engineer, Design Division, Engineering Department, E.I. du Pont de Nemours & Co, Inc, Wilmington, Delaware. This fourth paper in the series on specific phases of a company standards program was presented by Mr Rice at the Spring Meeting of ASA's Company Member Conference in Philadelphia, May 2 and 3, 1960.

An introduction to the series by Philip Callan, Eastman Kodak Company, was published in the July issue (page 207). The first article in the series, on the problems of starting a standards program, by Ernest E. Mohr, appeared in the August issue (page 238). The second article, by Philip H. Goeltz, on the company's standards manual, was in the September issue (page 268). The third, by E. S. Geary, on standardization of shop practice, was published in the October issue (page 299).

PROMOTION NEEDED

It has often been said that the benefits of industrial standardization are not self-evident. Standards promotion is a necessity if you are to have an adequate standards program.

Who must we sell? The answer is, two basic groups, as I see it—first, the users and potential users of standards: the project and design engineer, draftsmen, purchasing, maintenance, manufacturing, construction, research; and second, management, on whom we depend for support of our programs.

How do we sell them? How can we convince these people of the value of using standards? There are many techniques available. Before setting up any promotion activity, you should analyze those factors which might work against full acceptance of your standards. To be effective, a promotion program must

Figure 1. Du Pont's standards consist of 3,500 documents.

PROMOTION AND EVALUATION

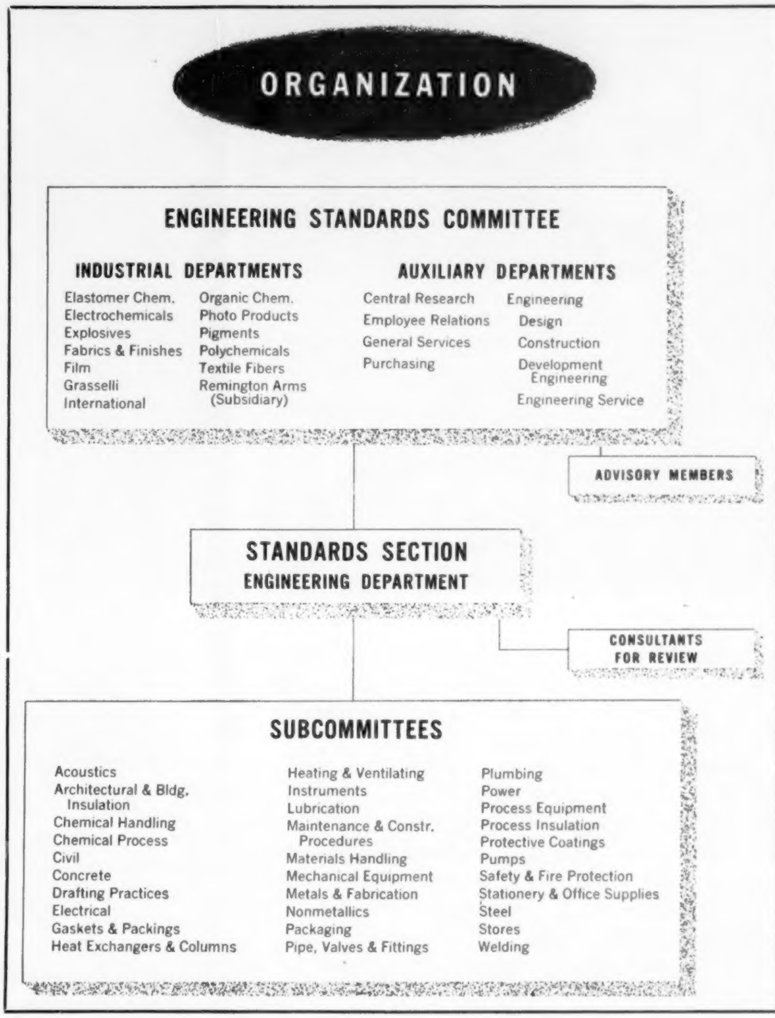

Figure 2. How Du Pont standards activities are organized. Engineering Standards Committee is the policy-making body.

encourage management support of the standards program, improve communications, overcome resistance to change; or, conversely, control demand for change, foster increased participation, and educate users in the advantages to be gained through use of standards.

DU PONT'S PROGRAM

At Du Pont, standards promotion is an important part of our over-all program. We devote the equivalent of one man full-time to this subject. Although the size and scope of our activity may differ from your own, many of the problems are the same.

In outlining our own promotion program, I do so only to give an idea of what one company is doing—not with the thought that this is the answer to all of your problems.

Du Pont standards consist of about 3,500 documents relating to plant buildings, equipment, and supplies (Figure 1). These are used throughout the company for the design, construction, and maintenance of Du Pont facilities and for procurement of materials and equipment. The use of these standards is not mandatory. However, we do expect that they will receive first consideration in any given situation. To insure that they are used, we find that we must promote them continually. Several major techniques are used.

First, and probably most important, is the fact that our program is organized to obtain company-wide participation in the development and approval of standards. The organization chart (Figure 2) shows the groups involved in our standards program. The Engineering Standards Committee, including representatives from all industrial departments and a number of auxiliary departments, is the policy-making body which directs the program and gives final approval to all standards which are issued.

The 31 subcommittees which actually develop the standards are likewise manned by people from all parts of the company. These subcommittees meet monthly to conduct their business. The Standards Section is a small group of experienced engineers

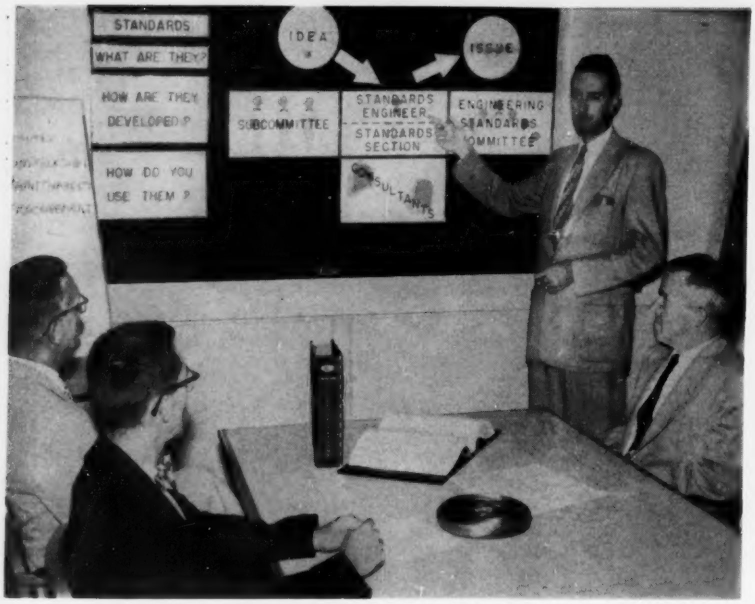

Figure 3. A typical training meeting. The standards engineer is explaining the steps in development of a standard.

working full time on the program. This broad company-wide participation in standards work is a major factor in obtaining acceptance of the standards by all departments and at all plant locations.

A second, and very effective, technique is the holding of training meetings both at plants and in our central Engineering Department (Figure 3). We invite engineers, draftsmen, maintenance supervisors —anyone who should know about the standards and who should be using them. Every designer in our Engineering Department has attended a series of formal training sessions specifically designed to acquaint him with the standards and to explain their use. These meetings include both a formal presentation and an open discussion period. The content of the training talk will vary with the audience, but basically we describe the kind of information contained in the standards, explain how they should be used, and particularly how the engineer can find the information he needs in the standards.

In these training sessions we emphasize the fact that our standards contain an accumulation of Du Pont know-how and experience regarding correct, economical ways of doing repetitive jobs. They are developed from the best practice we know, and through use have proven successful. Anyone taking advantage of this know-how can do these more or less routine, repetitive jobs more quickly and easily; devoting most of their energy and knowledge and talent to the special problems, inherent in many jobs, which cannot be covered by standards. As a corollary benefit, of course, the company realizes appreciable savings through reduced investment, lowered maintenance cost, and other direct dollar cost reductions.

Other important promotion techniques include subcommittee meetings at plants, various publications such as a monthly news letter directed to all standards users (Figure 4), and the use of bulletin board posters (Figure 5).

EVALUATION OF STANDARDS

Now let us consider program evaluation—and by this I mean a dollars-and-cents statement of the benefits we are getting from our standards—to make sure we are getting the most out of our program, and to insure continued management backing for the program.

We don't have to make much of an analysis to realize that the evaluation of a program is one of the standards engineer's problems. In 1955 and again in 1959, the American Standards Association published the results of surveys of company standards programs and in both cases the conclusions drawn were about

Figure 4. A Standards News Letter is issued to all standards users each month.

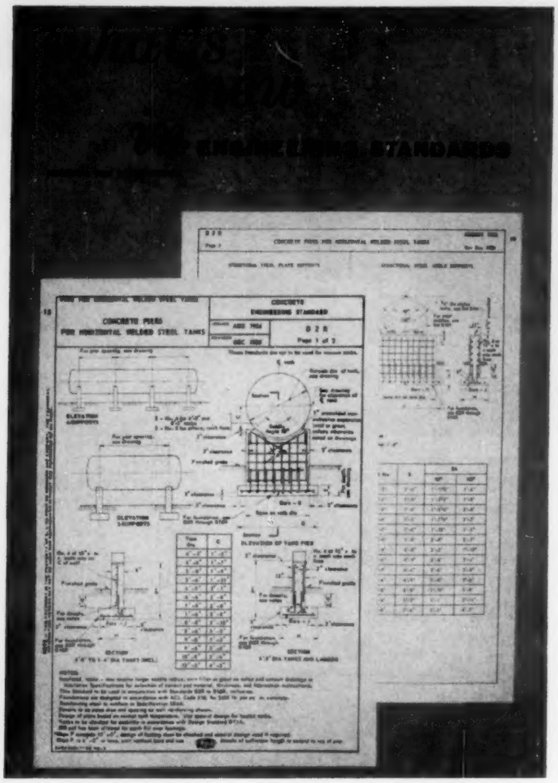

Figure 5. Bulletin board posters highlight new standards as they are issued.

the same. The introduction to the 1959 report, discussing the answers from various companies to questions regarding the extent, scope, savings, and cost of their standards programs, says:

"The most conclusive finding of the ASA survey was that American industry as a whole probably doesn't know the answers to such questions. About 2,800 companies were queried and 238 questionnaires were returned—of which 209 reported varying degrees of recognizable standards activities. Of these, 89 reported a formal, organized program. Thirty-four of the 89 were able to report actual dollar savings."

This report goes on to state, "The crucial finding of the survey, ASA officials feel, is that 30 of the 34 companies reporting dollar savings also report extensive use of standards and standards manuals. This seems to indicate that there is a close link between organized standards work and recordable cost savings."

I believe we all can agree that our standardization work is worthwhile only if it pays off. This payoff can take many forms, from a direct dollar increase in your company's profits to such intangibles as better relations with customers and suppliers, and better utilization of your technical manpower.

Some typical items which have been reported are: reduction of unnecessary types, sizes, or facilities; longer production runs with fewer change-overs; more suppliers to choose from; lowered investment in inventory; reduced storage space; engineering and design time saved; more uniform quality; disputes regarding tolerances reduced; improved customer relations.

QUESTIONNAIRE HELPS ESTIMATE SAVINGS

Du Pont's approach to this problem is not especially complex. We have always had to justify the existence of standards on a dollars-and-cents basis—in the early days when we spent a few thousand dollars on the program—and today when our operating budget is in the neighborhood of one-half million dollars a year and reported savings by users of the standards amount to over several millions of dollars each year.

To evaluate our program, we use estimates of the savings in design and drafting time, in maintenance and construction work, and in procurement activities. To obtain this information, we send, once a year, a questionnaire (Figure 6) to about 300 key supervisory people throughout the company. These include works engineers, laboratory directors, design project managers, and in construction various field project managers. The questionnaire asks these supervisors how often their people use the standards and what savings they estimate result through their use. When these forms are returned to the Standards Section, we total the dollars shown to obtain a gross savings figure. These savings are an important part of the Engineering Department's formal cost reduction program wherein accomplishments are reported to management.

By contributing to the growth and prosperity of his standards program and by ascertaining the value or amount of savings which result from the use of standards, every standards engineer can improve his program, his company's competitive position, and his own personal stature.

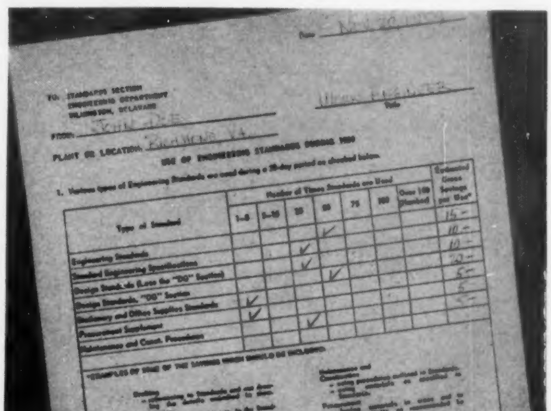

Figure 6. This questionnaire, completed annually by standards users, permits Du Pont to evaluate benefits from standards program.

INTERNATIONAL MACHINE TOOLS

At the TC 29 meeting: (Above) USA, far table; UK, foreground; Czechoslovakia and Poland, center of picture. (Below) UK, foreground; Hungary, top right; France, left, Germany, right, at table, left of picture.

PROGRESS IN DEVELOPMENT of international standards for small tools and machine tools was made at meetings of the international committees, ISO/TC 29 and ISO/TC 39, in New York September 19 to 30.

The committee on small tools, TC 29, met September 19-23, with M. Meriel-Bussy of France as chairman. AFNOR, the national standards association of France, holds the secretariat for the committee. Eight countries were represented at the meeting: Czechoslovakia, France, Germany, Hungary, Poland, Sweden, United Kingdom, and USA.

ABOVE: British, French, German, Czechoslovakian, Polish delegates (U.S., observer) in Working Group on Taps.
BELOW: French delegate demonstrates number of check points in testing lathe bed accuracy. A. Pallez, secretary, left.

Draft recommendations discussed at the meeting and released for approval by the ISO member-bodies covered:

Files and rasps
Parallel shank twist drills
Hand reamers and long fluted machine reamers, Morse taper shank
Shank diameters and driving squares for rotating tools with parallel shanks
Reduction sleeves and extension sockets for tools with Morse taper shanks
Taper sleeves for drill chucks
Dimensions for the interchangeability of milling cutters with milling machine arbors
Sections and tolerances of shanks for turning and planing tools
Carbide tips for turning tools (metric series)
Turning tools with carbide tips (metric series)
Chucking reamers with parallel shanks and Morse taper shanks
Screwing taps
Grinding wheels
Outside diameters of milling cutters
Wire drawing dies
Reamer tolerances
Thread lengths

A number of actions were taken looking to future work. Each member of the committee was asked to send to the secretariat a record of the nomenclature used in connection with wire drawing dies. The committee also left it to Working Group 19 on wire drawing dies to decide whether its program should be extended to dies of special form. The working group is also to study a Russian proposal to extend the range of dimensions upward.

The United States was especially invited to appoint a representative on the working group on twist drills, particularly for combined drills and countersinks.

The U.S. delegation made it clear that it disagreed with the entire draft on thread lengths for taps, and therefore could not participate in the discussion. The other delegations adopted standard lengths of threads for the following series: Metric coarse, Unified coarse and fine (UNC and UNF), British Standard screw threads (BSW, BSF, and BA). A further study of the fine-pitch series was made by a working group during the September meetings in view of proposals from the

COMMITTEES ON
MEET IN NEW YORK

Head table at TC 29 luncheon (left to right): A. Pallez, France, secretary; G. F. Hussey, Jr, ASA; M. Meriel-Bussy, France, chairman; H. L. McGregor, Jr, chairman of board, Metal Cutting Tool Institute (host organization); P. L. Houser, president of the Institute.

Germans for a standard length only, and from the Poles and Czechoslovakians for a minimum length only. It was decided that, failing agreement, two lengths should appear side by side as being applicable for international trade.

The committee requested Working Group 9, Carbide Tips for Turning Tools, to study international standardization of throw-away tips.

An additional table giving values in millimeters and inches of "preferred shank diameters" will be added to the draft recommendation, Shank Diameters and Driving Squares for Rotating Tools with Parallel Shanks, before being released to the General Secretary for circulation to the ISO member-bodies.

Sweden was named secretariat of a working group on pneumatic tool shanks to coordinate this work with that of a working group on rock drilling equipment being appointed by ISO/TC 82, Mining Equipment. Sweden also holds the secretariat for the TC 82 working group. A special invitation was offered the USA to join the group on pneumatic tool shanks.

Germany will serve as secretariat of the new Working Group 20 to consider definitions of angles of all types of cutting tools. The present membership, in addition to Germany, includes France, Hungary, Poland, the United Kingdom, and Czechoslovakia.

Suggested tables on driving tenons for tools with parallel shanks were submitted to Working Group 7.

The meeting gave considerable time and discussion to proposals on grinding wheels, which had been approved by all members except Germany. A working group was asked to re-examine the values in light of the German proposals, pointing out the necessity of adopting values leading to world unification by means of an exact correspondence of metric and inch values. However, the secretariat was authorized to put the draft recommendation on grinding wheels into final form. The part of the document relating to symbols, designation, and marking will be considered to be provisional for the purpose of facilitating international trade, while waiting for more complete studies on the method of determining the grit size.

The invitation of the Polish delegation to hold the next meeting in Warsaw in 1962 was accepted.

The meeting of ISO/TC 39, Machine Tools, consisted of meetings of Working Group 2, Test Conditions, on September 26, and of Working Group 3, Elements of Machines, on September 27 and 28, with the plenary meeting of TC 39 following on September 29 and 30. General P. Salmon, Commissioner of Standardization, French Ministry of Industry and Commerce, served as chairman of the plenary meet-

TC 29 delegates at the Pitney-Bowes plant (left to right): F. Danek, Czechoslovakia; W. L. Kennicott, USA; E. H. and W. E. Sollberger, Germany; H. Nitsche (partially hidden) Germany.

TC 39 delegates examining condenser tube sheet at the Worthington plant (left to right): Frank Brown, USA; Worthington guide; M. Gutierrez, USA; S. Kunstetter, Poland.

The head table at the TC 39 luncheon (left to right): A. W. Meyer, head of USA delegation; Vice Admiral G. F. Hussey, Jr, USN (ret), managing director, ASA; Ing. General P. Salmon, France, chairman; J. Birle, head of French delegation; C. T. Blake, USA.

ing. France holds the secretariat for TC 39, as well as TC 29. The following countries were represented: Czechoslovakia, France, Germany, Hungary, India, Poland, Switzerland, United Kingdom, and USA, and an observer delegate representing IEC.

The plenary session accepted a proposal on T-slots as a draft ISO recommendation.

In addition, action was taken on a number of subjects bringing agreement on draft recommendations a step closer. A proposal on practical tests for lathes is to be translated into English and circulated to the TC 39 members. Test conditions for milling machines were accepted in principle, but further study is to be given to checking milling machines at a greater distance from the spindle nose. Members of the committee have been asked to comment within six months.

It was agreed that the future program of Working Group 2 will be limited to studying geometrical and practical tests for lathes and milling machines with reference to permissible errors, taking Schlesinger and Salmon's specifications as the basis for such errors.

Agreement was reached on the material to be used as the basis for action by Working Group 3 on the direction of operation of controls. This study is aimed at establishing a system for determining whether the controls on machine tools should turn clockwise or counterclockwise (for wheels); and backward or forward, right or left, up or down (for levers) in order to produce movement of the workpiece or tool. A rewritten draft is to be submitted to the working group before going to the full technical committee. Later, the working group will study the possibility of world standardization of the few justified deviations from the general rule for some particular machines.

A table of flange dimensions for mounting grinding wheels on machines was agreed on. In addition, however, the secretariat is to work with USSR delegates to prepare a more complete draft covering all dimensions of grinding wheels specified by ISO/TC 29.

Further study is to be given to symbols on machine tool indicator plates, specifically in relation to symbols for electrical circuits and for starting and stopping nonelectrical mechanisms. Here, the object is to arrive at symbols that can be placed on control plates to illustrate the purpose of the control. In this way, a machine tool operator will be able to understand the function of the control even though the wording may be in German, French, English, or another language.

Decisions were also made on minimum clearances for precision grinding wheels and for snagging wheels, in connection with work on tolerances for the mounting of grinding wheels on machines.

The next meeting of ISO/TC 39 will be held in Paris, France. No definite date has been set but it is understood that it will not be earlier than a year from now and may be much later.

The TC 39 delegates: *1 Upper, 2 Parske, 3 Blake, 4 Meyer, 5 Ashburn, 6 Hieber, 7 Habach, USA; 8 Leo, UK; 9 Class, USA; 10 Lauroua, France; 11 Brown, USA; 12 Birle, France; 13 Barbier, IEC; 14 Meriel-Bussy, France; 15 Houldsworth, UK; 16 Gutierrez, USA; 17 Pallez, France; 18 Chadwick, UK; 19 Sclmon, France; 20 Blackall, USA; 21 Bhirangi, India; 22 Colton, USA; 23 La'za'rovits, Hungary; 24 Champetier, France; 25 Danek, Czechoslovakia; 26 Kunstetter, Poland; 27 Kaniewski, Poland; 28 Moyens, Interpreter; 29 Wegmuller, Switzerland; 30 Grey, ASA.*

REDUCING ITEM VARIETY

Part Two

by J. J. O'Farrell, Jr

THE TYPE OF COMPANY STANDARDS program described in Part One in many respects operates like a company within a company, with the company's requirements as its sole market. It is competing, however, not only against other internal potential sources for the item, but also against all outside suppliers. Therefore, it must have all the basic components of any company that provides a product on the open market: planning, development and design, market analysis and sales, product service, financial controls, and a source for manufacture. It must provide to this market "second-level products" or "corporate components" on a delivery and price schedule which will produce a "profit" for the parent company. Many companies have separate divisions or subsidiaries which perform this function. Others delegate responsibility for a specific subject to one location or division for the entire corporation. The basic concept, however, is the same.

The people assigned to the program must develop a state of mind that accepts the responsibility to operate in the public domain, rather than associating closely with any one project. At the same time, they must constantly share the sense of urgency and perspective of all the programs which they serve. Those responsible for providing the standards must be motivated to reduce item variety at least as much as those who are required to use the standards. The organizational concept must work in this direction.

An interdivisional pricing system will be required which will support the financial control system by maintaining consistency between company and divisional interests. Action taken by division personnel to assure maximum divisional profits must also contribute to maximum corporate profits [19]. Conversely, costs associated with a centralized operation must be redistributed to all areas which benefit from the program, on an equitable basis which reflects the po-

Part One of this article was published in the October issue of The Magazine of Standards, *pages 304-307. The article is based on a paper presented by Mr O'Farrell at the ASA Company Member Conference Spring Meeting in Philadelphia, Pennsylvania. Mr O'Farrell is corporate engineering standards manager, IBM Corporate Staff, International Business Machines Corporation.*

a - PARTS INFORMATION
- DATA CLASSIFICATION
- CODED PARTS PROGRAM
- STATISTICS

b - STANDARDS
- RECORDS
- PROCEDURES
- DESIGN PRACTICES
- PARTS AND ASSEMBLIES
- MATERIALS
- PROCESSES

c - APPLICATION
- COMPLIANCE TO ESTABLISHED STANDARDS
- FORECAST OF FUTURE USE OF STANDARDS

d - MEASUREMENT
- OPERATIONS COST AND EFFECTIVENESS
- PRODUCT COST AND PROFITS
- PRODUCT PERFORMANCE
- RETURN ON INVESTMENT

Figure 1. Major services of the IBM standards program.

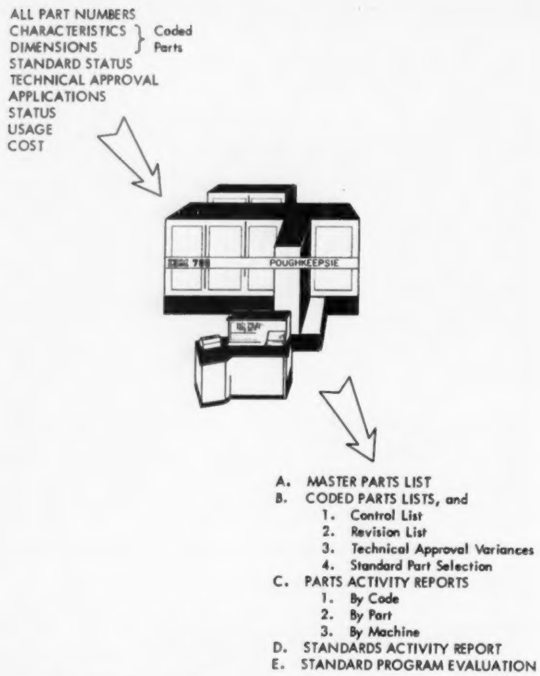

Figure 2. Electronic data processing is used in parts standardization as shown here.

tential value of the program to each area. In a decentralized corporation [20], the pricing policies must be consistent with the concept of autonomous divisions as unique profit centers.

The use of a standard cost system can stabilize the price and cost data on standards for discrete periods of time and allow sound decisions on standardization to be made. It also permits past performance to be more accurately measured.

As one explores this approach to standardization, several significant requirements appear:

First, a greater degree of over-all control of the design environment and direction, and a high order of technical management to achieve the objectives.

Second, authority to enforce the application of standards by those working in this environment, to achieve the over-all objectives set up by management. This must be combined with means for appealing unfavorable decisions, as well as with clear delegation of authority to resolve differences once an appeal has been reviewed.

Third, advanced evaluation and measurement techniques, based on operating information much more detailed and proprietary than that which would normally be available across an industry, or between industries. True cause and effect must be identified and used as the basis for appropriate action.

Fourth, many aspects of the company standardization program at this level require internal practices and policies that may be in direct conflict with those usually allowed between companies within an industry by the anti-trust laws [21]. Agreements between competing producers within the company on prices and markets, the deliberate creation of a single source or monopoly, restraint of competition, special price concessions and differential pricing policies, subsidies —all must be judiciously employed within the company if a company standardization program is to be successful, consistent with the profit objectives of the company.

CASE HISTORY

The discussion so far has proposed an approach to the problem. Philosophy is fine, but the next logical question is, "Will it work?" There are a number of successful working examples available, some not even identified as standards programs.

The IBM standards program has been in existence for several years [22]. Its major aspects are those outlined in Figure 1. It is our experience that it can work, but it is not an easy program to implement. Many problems are yet to be solved. Based on experience to date, we believe the benefits will justify the effort. Many aspects of the program are corporate-wide and involve IBM engineering and manufacturing locations all over the world.

IBM is comprised of a Corporate Headquarters Staff and 7 autonomous, profit-oriented product divisions and subsidiaries, with 19 domestic engineering and manufacturing locations and another 22 locations in 18 foreign countries. We not only assemble and use vendors' items ranging from the simplest hardware to complete functional units, we also design and manufacture this complete range of items within our own plants. Many items are engineered and manufactured at one IBM location to be supplied to other plants and divisions.

We also have a single sales and service division for the company whose members must be trained to install and maintain the commercial products of all divisions, regardless of where they are designed or manufactured.

Using electronic data processing as shown in Figure 2, we provide all IBM locations with complete catalogs of over 65,000 parts and assemblies, of which more than 5,500 are standard. This information is revised on a 90-day revision cycle and the amount of information is constantly being increased. A complete master parts list of all parts released in IBM is also published. Standard parts are now being selected by the aggregate of the weighted decisions of all users, and other data and statistical trends reflected by maintenance of this information, supplemented by an abbreviated engineering review. Time to establish parts standards has been reduced by as much as 75 percent. The method of dissemination is shown in Figure 3.

This program has resulted in a 43 percent reduction in the annual rate of release of new parts required in new applications. We emphasize the use of standards, but also provide approved nonstandard items if avail-

able as second choice. The details of this program have been described in an earlier paper [23].

On more complex items with significant functional financial impact on the company and its products, specific engineering and manufacturing responsibility is assigned to one division or location for the company [24]. These groups are responsible for the development, design, and engineering service for standards in that technical area for all users. They are also responsible for their standard "product" costs and markets.

In these technical areas, all designers have been clearly delegated responsibility for using standards, or submitting justification if they elect to use a non-standard item where a standard exists. Means of appeal and arbitration exist for those cases where the standards manager insists that the standard be used over the objection of the project manager.

Present and future use of all standards of functional or financial significance are forecast quarterly for almost 200 programs and products in the corporation as shown in Figure 4. Standard prices based on these quantities are used in establishing IBM product costs and rentals. Production or purchasing commitments may be made from these forecasts, in some cases prior to release to production of the first product using the item.

Techniques for measuring the effectiveness and value of the program have been introduced and, as experience is gained, improvements are constantly being developed. Some of the areas considered are listed in Figure 5.

While at first glance the standards program may appear to cost more, actually we have only identified for the first time as standards expense many costs previously hidden throughout other program budgets. Much of the effort has always gone on in duplicate, without coordination, directed solely to each program to which it was related.

We have already realized significant savings from the program in addition to those previously mentioned. A substantial reduction in product engineering time and cost is evident. Lower manufacturing costs and more reliable machines, with less service training and cost, give a net result of more data processing per dollar for the customer.

Many problems still exist, and our work is far from done. The degree of success achieved to date has itself created problems due to the reduced time between conception of new products using the standards and their release to production. Many significant decisions must now be made much earlier in a program to insure availability of material, facilities, and personnel on a compressed time schedule. Better cost control and dollar evaluation of the program are needed. Improvements must be made in engineering service to the designers and in ability to reduce the impact of engineering changes and improvements on past standard unit commitments.

The problem of scrap, and rework of revised or obsoleted standards, must be resolved, and better standard inventory forecasting and control must be introduced. Planning of future standards must be developed further, as well as prediction of the optimum life of a standard and of the impact of the next family of standards. Better definition of what constitutes optimum standardization in IBM products and operations is needed.

We must learn how to interpret more fully the statistics we are developing and the measurements we are

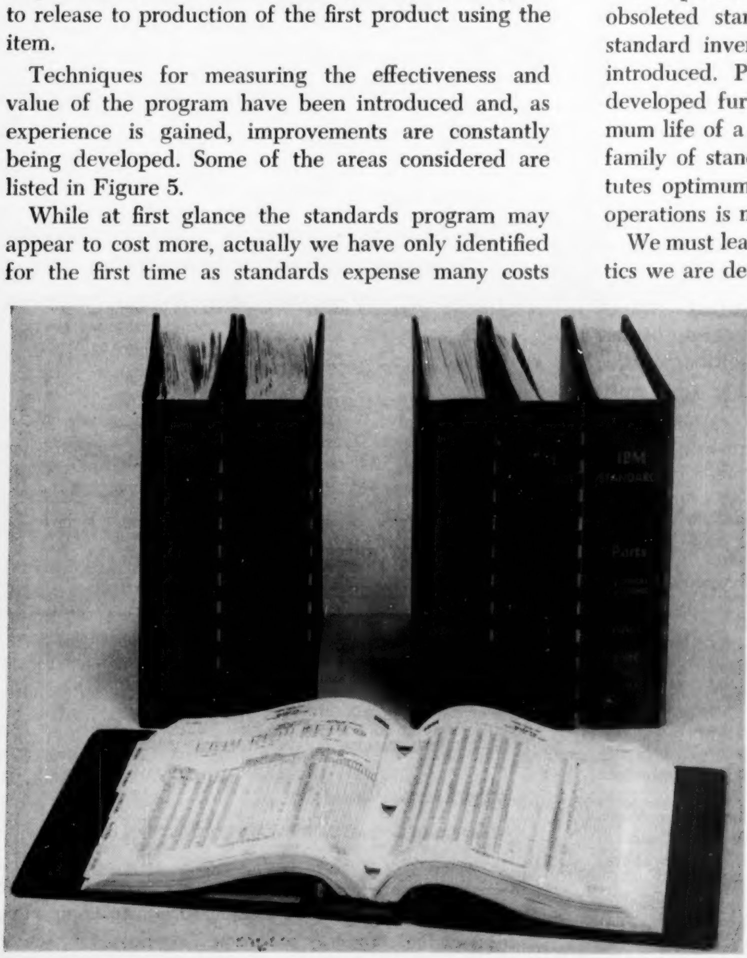

Figure 3. IBM standards are made available through these IBM Standards Books.

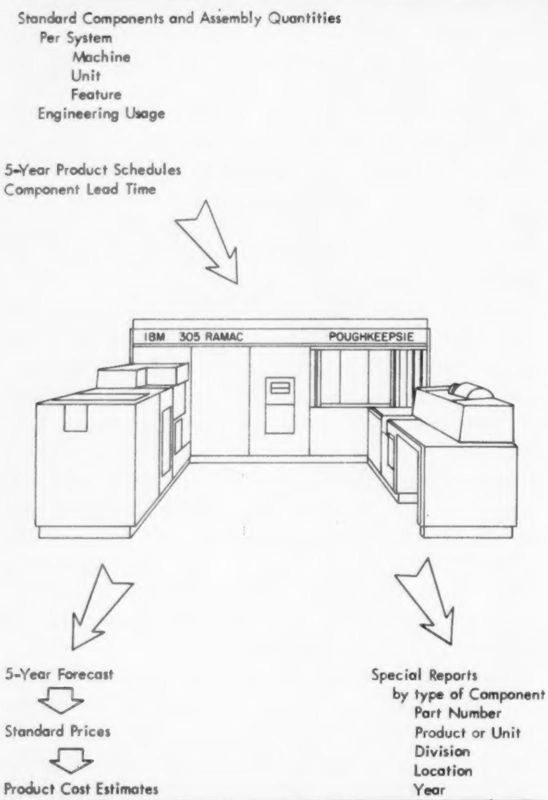

Figure 4. Using electronic data-processing equipment, forecasts are made quarterly on the present and future use of standards.

making on the program, and we must improve their scope and sensitivity in identifying cause and effect. Confidence in these techniques and acceptance of savings and other indicators must be developed.

Education of standards personnel to operate in this environment and to make individual decisions on the basis of a justified calculated risk rather than only after exhaustive committee activity is progressing. The standards users must be made more receptive to the idea that while unbridled freedom is necessary in the search for new knowledge, this same degree of freedom is not necessarily desirable when the objective is profitable product design.

CONCLUSION

A successful company, industry, or industry-military standardization program all require the same basic ingredients:

(1) Imagination in planning for the future on a broad scale for dynamic standards development,

(2) Optimum communication,

(3) Education to establish a state of mind which will exploit standardization in striving to attain the objectives set forth,

(4) Incentives which will make it worth the effort to standardize, expressed in terms which relate to the user's environment.

All these are necessary to achieve that desirable condition—"maximo ex minimo" (out of the least, the most).

ACKNOWLEDGEMENT

I would like to express my appreciation of support, assistance and suggestions of many people in IBM, some of whom have contributed to this paper, and who, working together, have made the program possible. The comments and suggestions made by many of those attending the Company Member Conference are also gratefully acknowledged and are reflected in this version of the paper wherever possible.

1. OPERATIONS COST AND EFFECTIVENESS
   - a - RELATIVE RELEASE OF NEW PARTS AND RE-APPLICATION OF EXISTING STANDARD AND NON-STANDARD PARTS AND FACILITIES
   - b - COMPATIBILITY OF PROCEDURES, DESIGN PRACTICES, RECORDS AND OPERATING DATA
   - c - EFFECTIVENESS OF CENTRALIZED SERVICES
   - d - INFLUENCE OF PUBLISHED STANDARDS
2. PRODUCT COSTS
   - a - CHANGE IN A PRODUCT COST DUE TO STANDARDIZATION
   - b - NET EFFECT ON OVERALL COSTS TO ALL PRODUCTS, DUE TO STANDARDIZATION
   - c - EFFECT OF STANDARDIZATION ON SCHEDULES
3. PRODUCT PERFORMANCE
   - a - FACTORY TESTING REDUCTION
   - b - FIELD SERVICE REDUCTION
   - c - CUSTOMER EQUIPMENT COMPATIBILITY
4. RETURN ON INVESTMENT
   - a - RATIO OF DOLLARS OF STANDARD "PRODUCT" PER DOLLAR OF PROGRAM COST

Figure 5. Some of the areas considered in measuring effectiveness of the standards program.

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Are These Cases Work Injuries ?

This is the thirty-fourth installment in the current series of rulings as to whether unusual industrial injury cases are to be counted as "work injuries" under the provisions of American Standard Method of Recording and Measuring Work Injury Experience, Z16.1-1954 (Reaffirmed 1959). The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply. Decisions on unusual industrial injury cases are issued periodically by the Z16 Committee on Interpretations. Reprints of each double page of cases published in THE MAGAZINE OF STANDARDS can be obtained in quantity from the American Standards Association at $1.50 per 50 copies.

Sectional Committee Z16 is sponsored by the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

INDEX TO CASES 400-800. An index to Cases 400-800 has now been completed. Arranged numerically by the number of the applicable paragraph of American Standard Z16.1-1954 (R1959), the index includes the number of the case indexed and a key letter indicating what the decision was in each case. Each index reference includes a brief description of the case.

Reprints of Cases 400-800, with the index, are now available from ASA at $2.50. Discounts for quantity orders may be obtained on request.

CASE 801 (5.1)

An oven charger reported to his foreman at 3:00 A.M. that one-half hour earlier he had noticed a slight aching around his right hip while dampering off a coke oven. He said he had dampered the oven in the same manner for a period of years, and was doing nothing unusual in this case. Light duty for the remaining four hours of the shift was offered, but the employee said the pain was not that severe, and he preferred to continue his regular job. At 10:00 A.M. that same day the man was examined by the company doctor who thought he had a possible right inguinal hernia. The employee reported back to the physician two days later at which time a definite hernia was found.

Decision: This hernia should be included in the work injury rates on the basis that the man was engaged in a work activity which could have contributed to the injury, pain was evident at the time the injury was reported, and the employee went to a doctor within 12 hours, thus parts (a), (b), and (c) of paragraph 5.1 were satisfied.

CASE 802 (5.18)

An employee whose shift was from 3:30 P.M. to 12:00 midnight called the personnel office at about 8:30 A.M., stating that he had just returned from his doctor's office in connection with a work injury having to do with small glass fiber particles which had irritated his eyes during his previous work shift. He said he would have to miss two days from work as his doctor had ordered him to remain in a dark room.

The man had not reported the injury to his supervisor and had not received first aid during his shift. Neither he nor his personal physician had called the personnel office which had been open since 7:00 A.M. The employee's personal doctor was not engaged or authorized by the employer. The positive and definite opinion of the doctor authorized by the employer was that the eye irritation suffered by the employee in question was not severe enough to warrant a lost-time accident. Had he been the physician treating the case, the man would have been furnished dark glasses and returned to work. The consulting eye physician used by the company had handled several similar cases in this manner.

Decision: This injury should not be considered disabling, and should not be included in the work injury rates on the basis that the doctor authorized to treat the injury, even though he did not see the employee, apparently was familiar with this type of eye irritation, and on this basis believed the injury should not have caused any lost time from work.

CASE 803 [A1.6 (d)]

A sales correspondent who worked at a desk in an office was never required to visit customers or others with whom he dealt, and travel was not involved in his job. He lived some 40 miles north of his office, and drove the same route to work every day, returning home the reverse of this route.

Once or twice a year an evening meeting would be held for all inside sales personnel to review past results and future plans. These meetings were always held at a convenient nearby location where dinner could be served early, followed by the meeting.

On the evening in question, the employee, having attended the meeting, deviated from his normal route for a few miles, after which he rejoined his regular route of travel and continued toward his home in the normal manner. Approximately half way between his office and his home the man lost control of his vehicle and suffered fatal injuries when his car struck a tree. He had left the meeting at about 10:15, and the accident occurred at about 10:45. There were no witnesses; liquor was not involved.

Because this employee had rejoined his normal route home before the accident occurred, the company asked whether this fatality could be excluded from the rates on the basis of paragraph A1.6 (a).

Decision: This should be considered an industrial fatality, and should be included in the work injury rates on the basis that this employee entered travel status when he left the company's premises traveling to the meeting place, and he continued in that status until he either returned to his regular workplace or reached his home. Since he was on a special assignment and the travel was not going to his regular place of work as covered in A1.6 (a), the committee concluded that the employee's status at the time of the accident was within the concept of Example 1 of A1.6 (d), and should be considered as within the course of employment throughout the trip from the meeting place to the man's home.

CASE 804 (5.2)

A substation electrician and a fellow employee slid a 3-in. by 12-in. by 14-ft timber only a few feet on the ground. An oil circuit breaker had been resting on the timber, and when the circuit breaker was hoisted in the clear, the two men bent over and pulled the timber out from the position underneath the breaker. The employee in question stated that he and the fellow employee experienced no difficulty whatsoever in moving the timber, and that he was never in any strain in doing so. He said that when he started to straighten up from a bent-over position he felt a catch in his back. Several times in the past this man's back had pained him without any exertion, slip, fall, or any accident of consequence.

The orthopedic surgeon who treated this man diagnosed his case as chronic, recurrent, lumbo-sacral syndrome, superimposed on osteo-arthritis of the spine. The x-rays showed degenerative changes, and the surgeon stated that it was not unusual for such patients to experience episodes similar to those experienced in the past, regardless of what activities were carried out. He did not believe that the current symptoms were caused by the above incident.

Decision: This incident should not be considered a work injury, and should not be included in the work injury rates. Although there was an incident, satisfying part (a) of paragraph 5.2, the physician authorized to treat the case did not believe the condition was due to the man's work, and it does not satisfy part (b) of 5.2.

CASE 805 (5.11)

For many years the company had held annual picnics for employees and their families, providing lunch, soft drinks, and prizes for the various games and contests, the contests being for employees, their wives, and children. The picnic was planned and put on by volunteer employee committees. Although management selected the membership of these committees, the employees could and sometimes did refuse to participate if they so desired. Most of the planning meetings were held on company time, but the picnic itself was held at a public park on Saturday when the plant did not operate, and no employees were paid for attending the picnic or working on committees at the picnic. Attendance at the affair was entirely voluntary.

After the picnic, committee members collected all materials, loaded them in a company truck, and returned the material to the plant. While a truck was being unloaded at the plant after the picnic, the tail gate dropped, and the chain injured an employee's finger. The injury did not seem to be severe, but the man was immediately taken to a doctor, and it was discovered that the finger had been fractured. It was splinted, the man was released and no lost time was involved. However, sometime later the physician stated that there would probably be a slight permanent disability as a result of the fracture.

Believing that a picnic was held for the same reason as most industrial athletic events, the company asked whether preparing for and cleaning up after such events would come under paragraph 5.11.

Decision: This disability should be included in the work injury rates, and the incident interpreted under paragraph 1.5 (b) or (c). Paragraph 5.11 is a specific exception for athletic activities, and the committee did not believe the activities described in this case could be thought of as athletic, nor the specific exception of 5.11 could be enlarged to a general principle to include other events.

CASE 806 [A1.6 (i)]

During his 10-minute rest break, while viewing the confusion at the main gate which was caused by a minor vehicle accident, a maintenance mechanic was struck from behind by a truck owned and operated by a vending machine concern. The truck was backing out of the parking lot, to leave via the main gate. Rest periods for the maintenance department were taken in a special area, set aside approximately 50 yards from the location of the accident. The company asked whether this injury could be excluded from the rates on the basis of paragraph A1.6 (i) on parking lot injuries.

Decision: This injury should be considered a work injury and included in the work injury rates. The Committee on Interpretations believed this case came under paragraph A1.6 (i) on injuries during rest breaks, since the circumstances described were not considered as being related to a parking lot.

CASE 807 [5.2 (a)]

An employee with no previous history of back trouble felt a sharp pain in his back when inverting a 6½-gal glass carboy approximately one-third full of water (combined weight no greater than 30 lb) to drain. The pain occurred while he was rinsing the second carboy that day. He had performed the same job on previous days in the same manner. The procedure used was to remove the carboy from its wood crate, fill it one-third to one-half full of water, lift it off the floor several inches, swirl the contents, and invert the carboy to drain. The injured employee said he "just twisted the wrong way." He reported to the dispensary, was examined, and was sent home by the plant physician. The company questioned whether this incident met the conditions of paragraph 5.2 (a).

Decision: The committee believed the description of this incident did meet the the requirements of paragraph 5.2 (a), and since the doctor apparently was satisfied that the injury was related to the incident, the case should be counted.

CASE 808 [5.2 (a)]

Two employees carried a pump weighing approximately 65 lb from the workbench 3 ft high to a distance of 6 ft, and then set it down on the floor. One of the men, with no previous history of back trouble, could not straighten up after bending over while setting the pump on the floor. The employee was assisted to the dispensary where he was treated for a strained back. With the plant physician's approval, he did not report to work the following morning because of pain in his back.

Decision: This case should be included in the rates because it meets the requirements of paragraph 5.2 (a) which the company had questioned.

CASE 809 [5.2 (a)]

An electric-line truck driver drove his truck from the warehouse to an icehouse to pick up ice for the water cooler, a chore performed daily before the crew went to the work site.

It was routine for the driver to pull the truck alongside a small platform at the icehouse, get down from the truck on the driver's side, and take five or six steps to the end of the platform, step up about 28 in. onto the platform, and enter the icehouse to get the ice while another crew member got the water cooler from the back of the line truck.

On the day in question the same routine was followed; however, as the truck driver stepped up on the platform, a rather severe pain developed in his lower back. There was no slip, trip, fall, or sudden effort that preceded the pain. After a few minutes the pain subsided, and the man proceeded with his normal duties without pain for several hours. However, during the latter part of the afternoon his back became uncomfortable, and by quitting time it was quite painful.

After completing his day's work the man went home to clean up. As his back was quite painful, he went to the company doctor's office, but finding it closed, he then went to see an osteopath. A sore spot was found on his lower back, and no specific treatment was given. The next morning his back was still painful, and he returned to the osteopath who advised him to stay off work for a few days.

The following day his condition had not improved, so he contacted the company doctor who gave diathermy treatment and applied a sacroiliac belt; the belt gave immediate relief from pain. The employee returned to the company doctor the following day for another treatment, and was released by him with no further treatment the next day. He returned to work six days after the original incident, wore the sacroiliac belt for one week, and had no further pains.

The employee was in good physical condition and had never had trouble with his back. Due to the type of work and the mountainous area in which the crew operated, the members were continually climbing and stepping over rocks, in and out of ditches, etc, and a step of 28 in. was nothing unusual.

Decision: The lost time should be included in the work injury rates on the basis that stepping up on a 28-in. high platform would be considered an incident, thus meeting the requirements of 5.2 (a). There was no question about part (b) being met.

STANDARDS FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Information about those standards not selected for listing in THE MAGAZINE OF STANDARDS may also be obtained from the ASA Library. Orders for these standards may be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. For the convenience of readers, the standards are listed under their general Universal Decimal Classification number. In ordering copies, please refer to the number following the title.

003.62 SIGNS, NOTATIONS, SYMBOLS

Hungary (MSZH)
Graphical symbols for instrumentation MSZ 14000

Norway (NSF)
Symbols and units. Writing and printing principles NS 909

United Kingdom (BSI)
Graphical symbols for components of servo-mechanisms: Transductors and magnetic amplifiers BS 3238:Part 1:1960

615.4 PRACTICAL PHARMACY. MEDICINES. INSTRUMENTS. HOSPITAL EQUIPMENT

Germany (DNA)
3 stds for surgical scissors, different forms DIN 58252/4
2 stds for orthopaedic appliances DIN 58331, 58340
Absorbent cotton for medicinal use DIN 61640

Norway (NSF)
2 stds for hospital textiles. Sheets, etc NS 604, 630

United Kingdom (BSI)
Specification for Halsted's mosquito forceps BS 3246:1960
Specification for Peters' aural specula BS 3259:1960

621.822 BEARINGS. AXLE BOXES. BUSHINGS

Czechoslovakia (CSN)
Identification code for antifriction bearings CSN 02 4608

Germany (DNA)
Ball race with V-groove and V-key DIN 2210
Balls for ball bearings DIN 5401

Italy (UNI)
Boundary dimensions of radial bearings except tapered roller bearings UNI 4259

Spain (IRATRA)
Bearings: Four-language terminology (Spanish, English, French, and German) UNE 18 059
2 stds for tolerances for radial ball bearings UNE 18 062/3

USSR (GOST)
Cylindrical roller bearings with short rollers without inner or outer ring. Types and basic dimensions GOST 5377-60

621.85 FLEXIBLE TRANSMISSION AND DRIVES

Czechoslovakia (CSN)
10 stds for different slat conveyor belts CSN series 2637

Denmark (DS)
Flat belt drives. Dimensions of belts and pulleys. Adjustment of centers DS 974

India (ISI)
Solid-woven impregnated cotton belting for power transmission IS:529-1959
Solid-woven impregnated hair belting for power transmission IS:530-1959

621.9 TOOLS. MACHINE TOOLS

Argentina (IRAM)
Metal graduated straightedges IRAM 5064
Saw files IRAM 5070
Rasps IRAM 5071

Czechoslovakia (CSN)
Rules for checking accuracy machine tools CSN 20 0300
Nippers CSN 23 0320

Hungary (MSZH)
25 stds for different milling arbors, chucks, sleeves, etc MSZ 3818 thru 3843
Twist drills, general requirements and test methods MSZ 3983
Three-jaw lathe chuck, automatic centering MSZ 5051
Three-jaw drilling chuck MSZ 6426

Italy (UNI)
Cross sections of tool shank blanks UNI 4245
13 stds for high-speed steel lathe curring tools, various forms UNI 4226/58

Mexico (DGN)
Hacksaw blades for metal B-102-1959

USSR (GOST)
Three-angle disc cutters with inserted carbide blades. Basic dimensions GOST 5348-60
Carbide tipped blades for double and three-angle disc cutters and wedges. Dimensions GOST 9406-60
Open single crank, single action presses. Main technical data and dimensions GOST 9408-60
Vertical drilling machines. Accuracy and rigidity GOST 370-60
Long twist drills with straight shanks. Basic dimensions GOST 886-60
Short twist drills with straight shanks. Basic dimensions GOST 887-60
Twist drills with taper shanks. Basic dimensions GOST 888-60
Automatic twist drills with straight shanks. Basic dimensions GOST 2090-60
Lengthened twist drills with taper shanks. Basic dimensions GOST 2092-60
Carbide twist fluted drills with straight shanks. Basic dimensions GOST 5349-60
Diamond dies for wire drawing GOST 6271-60
Carbide tipped drills. Types and basic dimensions GOST 6647-60

628.9 ILLUMINATING ENGINEERING

Canada (CSA)
Installation of lighting rods B72-1960

Germany (DNA)
Interior lighting with day light, instructions for DIN 5034

India (ISI)
Electric hand lamps IS:1415-1959

United Kingdom (BSI)
High-intensity elevated runway lighting fittings BS 3224:1960

629.113 MOTOR CARS. AUTOMOBILE ENGINEERING

Argentina (IRAM)
Pistons for automobiles IRAM 11 006
Automotive spark plugs IRAM 11 010
Ceramic automotive spark plugs of 22.22 mm (7/8) IRAM 11 017
Screw junction for spark plugs of ceramic material IRAM 11 028

Austria (ÖNORM)
Acceleration, deceleration, braking ÖNORM V 5004

Germany (DNA)
Oil-pressure switch DIN 75552
Flexible drive for automobile instruments DIN 75532

India (ISI)
Automotive hydraulic brake fluid IS:317-1959

Spain (IRATRA)
Bayonet type base for automobile lamps UNE 26 098

2 stds for locating pins, smooth, stepped UNE 26 133/4

677 TEXTILE AND CORDAGE INDUSTRY

Belgium (IBN)

Textiles, length of woolen fibers NBN 559

Germany (DNA)

Hard fiber yarn DIN 60150
Colorfastness test of woolen textiles to acid chlorine DIN 54046
Colorfastness test of textiles to chromium in dyebath DIN 54052

Hungary (MSZH)

25 different tests for colorfastness of fabrics MSZ series 9402

India (ISI)

Cotton duck, scoured, dyed or waterproofed IS:1422-1959
Cotton canvass, scoured, dyed or waterproofed IS:1424-1959
Rayon jaquard fabrics IS:1455-1959
Cloth, baize IS:1530-1960
Cloth, blanket IS:1531-1960
Serge blue worsted IS:1532-1960
Serge drab mixture, water resistant IS:1533-1960
Cotton lining cloth, dyed IS:1535-1960
Cotton yarn, gray, for handlooms IS:1539-1960
Rayon crinkle georgette or crinkle chiffon IS:1430-1959
Rayon satin IS:1453-1959
Rayon sari cloth IS:1454-1959
Rayon baby sharkskin IS:1456-1959
Rayon sharkskin IS:1457-1959

Pakistan (PSI)

Methods of testing of cotton yarn PS:8-1958*
Methods of inspection of cotton yarn grey PS:9-1958*
Methods of inspection of cotton hosiery yarn PS:22-1958*
Methods of inspection of cotton fabric grey PS:23-1958*
Methods of testing of woven cotton fabrics PS:24-1958*
Cotton cloth twill PS:28-1958*
Cotton cloth shirting PS:29-1958*
Cotton cloth calico PS:30-1958*
Cotton cellular shirting PS:31-1958*
Cotton cloth poplin PS:32-1958*
Cotton sewing thread PS:33-1959*

Switzerland (SNV)

Standard atmosphere for fabric tests SNV 95150
2 stds for quantitative chemical analysis of fibers SNV 95545,-550
3 stds for testing fabrics for washfastness SNV 95532/3,-536
Flash point test of fabric with USA flash tester SNV 95899
Test for chlorine absorption of textiles SNV 65620
Test for yarn distortion in woven fabrics SNV 98471

United Kingdom (BSI)

Description of fabrics BS 3257:1960
Cleanliness of fillings and stuffings for bedding, upholstery, toys, and other domestic articles BS 1425:1960

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* Available in English

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF THE MAGAZINE OF STANDARDS, published monthly at New York, N. Y., for Oct. 1, 1960.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher: American Standards Association, Incorporated, 10 East 40th Street, New York 16, N. Y. Editor: Ruth E. Mason, 10 East 40th Street, New York 16, N. Y. Managing editor: None. Business Manager: None.

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 8949

Ruth E. Mason
Editor

Sworn to and subscribed before me this 21st day of September, 1960.

Lydia I. Gustafsson
Notary Public, State of New York
Qualified in Westchester County
No. 60-1608150 3-31-59
Cert. filed with New York Co. Clerk
(My Commission expires March 30, 1961)

New International Recommendations

ISO Recommendations are published by the International Organization for Standardization, and IEC Publications by the International Electrotechnical Commission, Geneva, Switzerland. Copies are available from ASA.

RECOMMENDATIONS FOR INDICATING ELECTRICAL MEASURING INSTRUMENTS AND THEIR ACCESSORIES. IEC Publication 51. 1960. Second edition. $6.00.

Applies to the following types of indicating electrical measuring apparatus for direct and alternating currents: ammeters, voltmeters, single-phase and polyphase wattmeters, varmeters and phasemeters, frequency meters of the pointer and vibrating reed types, and ohmmeters. Also applies to certain accessories used with these instruments, such as shunts, series resistors, inductors, and capacitors.

Instruments incorporating devices such as rectifiers, diodes, and thermocouples are covered, but electronic measuring instruments (including transistorized instruments) are excluded.

RECOMMENDATIONS FOR INSULATION CO-ORDINATION. IEC Publication 71. 1960. Third edition. $3.20.

States the conditions to be fulfilled by the insulation of electrical equipment, in the form of general recommendations which, as far as possible, are common to all such equipment. The recommendations apply to all electrical apparatus (except generators, rotating machinery, underground cables, and overhead lines) used in exposed installations on alternating-current systems having a nominal voltage greater than 1 kilovolt.

RECOMMENDATIONS FOR THE DIMENSIONS AND OUTPUT RATINGS OF ELECTRIC MOTORS. PART 2: DIMENSIONS OF MOUNTING FLANGES FOR ELECTRIC MOTORS. IEC Publication 72-2. 1960. Third edition. $2.40.

Constitutes the second part of the third edition of IEC 72. Its recommendations apply only to flange-mounted induction motors, with outside diameter of flange 90-1000 mm (9¼-22 in.). Two series of standard dimensions are recommended, one for flanges in metric dimensions, and the other for flanges in inch dimensions.

RECOMMENDATIONS FOR BALL AND SOCKET COUPLINGS OF STRING INSULATOR UNITS. IEC Publication 120. 1960. First edition. $8.00.

Establishes a series of four standard sizes of ball and socket couplings for use in assembling string insulator units into chains. An appendix gives the dimensions of a series of gages for checking the couplings.

• NEWS BRIEFS

• A NEW spindle nose size, designated 50A, included for the first time in American Standard B5.18-1960, is one of the important changes in this new American Standard, Spindle Noses and Arbors for Milling Machines. The new edition supersedes B5.18-1953. The new spindle nose size, added at the suggestion of the American Society of Tool and Manufacturing Engineers, reflects the growing use of flat back cutters for production milling.

Other detail changes and corrections in the tables and drawings have been made at the request of a special committee of 15 milling machine manufacturers, in order to reflect current practices more accurately.

In addition, the method of dimensioning radial hole locations has been changed to follow the principles set forth in the American Standard Drafting Manual, Dimensioning and Notes, Y14.5-1957.

For the convenience of the user of the standard, all revisions or additions to the previous edition are box-outlined.

The first edition, B5.18-1943, resulted from intensive effort dating back to 1926 by a special group of milling machine manufacturers; the National Machine Tool Builders' Association; and Technical Committee 4 of the Sectional Committee on Small Tools and Machine Tool Elements, B5. It was reaffirmed without change in 1949, and brought up to date with the Unified Screw Thread Standard in 1953.

American Standard B5.18-1960 is available at $1.00 per copy from the American Standards Association, or from the publisher, The American Society of Mechanical Engineers.

• ONE OF A NEW GROUP of U.S. Government motion pictures assigned to United World Films for release to the industrial field is one entitled "Standardization: Engineering Planning." The 16mm color film runs for 15 minutes. As explained by the distributor, it presents a pictorial analysis of the type of engineering and technical work which is necessary on a planned basis to achieve standardization objectives in large and complicated technical areas.

Further information can be obtained from United World Films, Inc, (Government Department), 1445 Park Avenue, New York 29, N. Y.

• THE AMERICAN STANDARDS Association is calling a national conference on international standardization policies with particular regard to Latin American operations, at Hotel Biltmore, New York, 2:30 p.m., December 16. Those desiring to attend please advise ASA at the earliest possible date. The part ASA should play as a member of the Pan American Standards Committee will receive particular attention.

• A TWO-DAY symposium on containerization was a principal feature of the first cargo-handling exposition held in the Port of New York. The exposition was sponsored by the New York Chapter of the United States Merchant Marine Academy Alumni Association, in conjunction with the International Cargo Handling Coordination Association, New York City's Marine and Aviation Department, and the American Standards Association.

At the end of the symposium, reports indicated, industry leaders saw the container as an industry-wide reality in ocean-freight movement within five years.

A statement by Fred Muller, Jr, describing the need for containerization and the work now going forward on standards, made the greatest impression, it was reported. Mr Muller is a transportation expert of the consulting engineering firm of Arthur D. Little, Inc, and is secretary of ASA's Sectional Committee MH5, Sizes of Shipping Containers.

Mr Muller said that the use of containers for carrying freight aboard ships would reduce the cost of hauling freight to piers from the present average of $7.80 a ton to 60 cents a ton. This includes unloading and transfer from railcar to truck, the trucking itself, and the unloading of the truck, he said.

Mr Muller also said that American-flag freighters using containers could overcome the competitive advantage in labor costs enjoyed by foreign-flag lines. Citing the average figure of $12 a ton for waterfront labor-handling costs here, compared with $4 a ton abroad, he said standard size containers aboard American ships would result in a reduction of labor costs for ship loading and unloading from $12 a ton to $6 a ton.

Although Sectional Committee MH5 is making progress toward agreement on standard container sizes which the committee expects will be approved early in 1961, it is expected that use of the standard-size containers may not be in effect for from four to five years. One of the major factors is conversion of conventional cargo vessels to carry containers, it was explained. Another may be the problem of tooling up for production of the standard-size containers by manufacturers who are now producing containers of varying lengths, widths, and heights.

Shipping containers on exhibition at the cargo-handling exposition.

Thomas A. Marshall, Jr

• THOMAS A. MARSHALL, JR, has been elected executive secretary of the American Society for Testing Materials, effective October 15, 1960. Mr Marshall has been serving as senior assistant secretary of the American Society of Mechanical Engineers.

As executive secretary of ASTM, Mr Marshall will head a staff which supports a society of 10,500 members and 6,000 additional committee members. Some 85 ASTM technical committees are concerned with research and development of standard specifications and methods of test for materials.

In announcing election of Mr Marshall, Dr A. Allan Bates, president of ASTM, also announced that Fred F. Van Atta, formerly assistant secretary of ASTM, was elected to the post of treasurer with responsibility for the business operations of the Society. Robert J. Painter, formerly executive secretary and treasurer, will continue as consultant to the executive secretary. He will be especially concerned with the Society's long-range planning program. Raymond E. Hess will continue as associate executive secretary. As technical secretary and editor-in-chief, Mr Hess is responsible for the technical activities and publications of the Society.

Mr Marshall was born in Savannah, Georgia, in 1911 and received his early education there. In 1932 he was graduated from the Georgia Institute of Technology (then Georgia School of Technology) with a B.S. degree in Aeronautical Engineering.

From 1932 until 1951, except for five years active duty with the U.S. Navy during World War II, Mr Marshall was employed in the main office of the Metropolitan Life Insurance Company, first in various capacities in stationary engineering, and later in posts of increasing responsibility in the Coordination Division.

In 1951, Mr Marshall became executive secretary of the Engineering Manpower Commission which had just been formed by the Engineers Joint Council, and a year later became secretary of EJC as well.

Mr Marshall joined the staff of ASME in 1954 to manage the Society's 75th Anniversary Celebration and its public relations activities. In 1956 he was named head of technological service, leading to his appointment as assistant secretary and, later, senior assistant secretary.

During World War II, he served as gunnery officer of *USS Orizaba*, executive officer and commanding officer of *USS Saturn*, and commanding officer of *USS Lumen*. He also served as assistant engineer and material officer on the staff of Commander Service Force, U.S. Atlantic Fleet. He attained the rank of commander, and was recently retired from the U.S. Naval Reserve.

Mr Marshall is a member of the American Society for Engineering Education, ASME, Human Factors Society, U.S. Naval Institute, Tau Beta Pi, Army and Navy Club, Georgia Tech Club of New York, Engineers' Club of New York, National Society of Professional Engineers, and Engineering Institute of Canada. He is a registered professional engineer in the State of New York.

Mr Van Atta has been assistant secretary of ASTM since shortly after joining the staff in 1953.

Mr Hess is well known in materials and standardization circles, having been a member of the ASTM staff since 1920. He has been an alternate member of ASA's Standards Council since early in its history and is an alternate member of all of ASA's standards boards.

• THE NATIONAL Retail Lumber Dealers Association has announced new standards for unitizing lumber for efficient mechanical handling. As an aid to dealers who do not have large fork lift equipment, NRLDA recommended the establishment of a new "standard unit" of lumber which would measure 4 ft x 2 ft, replacing the previous 4 ft x 4 ft unit. The larger unit was too heavy for the light fork lift equipment used in many retail yards.

• CYRIL AINSWORTH, deputy managing director of the American Standards Association, attended meetings of the Pan American Federation of Engineering Societies, held at Buenos Aires in September. Other members of the U. S. delegation were Dr A. T. McPherson and Dr Norman Bekkedahl of the National Bureau of Standards, and Wm Andrus, IBM World Trade. They participated in round-table discussions on standardization problems and methods in various engineering fields.

Subsequently, the U.S. delegates attended meetings of the International Congress on Standardization, which was specially organized in celebration of the twenty-fifth anniversary of the Argentine national standards body, IRAM. Among the representatives of a number of other national standards bodies were those from the United Kingdom, France, Brazil, Mexico, Uruguay, and Chile. The International Organization for Standardization was represented by its general secretary, Henry St. Leger. Among subjects discussed were those concerning greater coordination of national standards among Latin American countries in cooperation with existing international standards organizations.

Keith D. Clotz

• THE NATIONAL Association of Plumbing Contractors, member-body of the American Standards Association, has named Keith D. Clotz as its representative on the Standards Council. Mr Clotz is the new chairman of the NACP's Plumbing Standards Committee, and is a member of the Plumbing Advisory Committee to the U.S. Public Health Service.

Having learned both the plumbing and heating trades in his father's company, Mr Clotz has been associated with the plumbing and heating industry all his life, and has been in sales management and engineering since 1934. He is a vice-president of

the Spohn Heating and Ventilating Company, Cleveland.

Mr Clotz has served as a national vice-president of the American Society of Sanitary Engineers, and was president of the Society's Ohio State Chapter for two terms. He is a past president and founder of the Cleveland Better Heating and Cooling Council.

• AT A GENERAL CONFERENCE called by the American Standards Association August 25, U.S. maritime leaders voted to form an advisory committee to study whether the United States should take an active part in establishing international standards for shipboard equipment. Seventeen representatives of various maritime organizations attended.

The national standardizing body of Holland, Stichting Nederlands Normalisatie-Instituut (NNI), holds the secretariat for ISO/TC 8, Shipbuilding Details. Until now, the United States has held an observer status on this ISO project.

• FEW OF THE MODERN industrial standards can look back on a 120-year history as is the case with the newly revised American Standard for Pipe Threads, B2.1-1960. This American Standard is based on a system of pipe threads known since the 1880's as the Briggs Standard, which in turn incorporated the nominal sizes of pipe (10 inches and under) and the pitches of the thread established even earlier—between 1820 and 1840. In the latest revision of the standard, the dryseal pressure-tight joints have been published separately as American Standard B2.2-1960. Sponsored by the American Gas Association and the American Society of Mechanical Engineers, and published by ASME, American Standard B2.1-1960 is available from ASA at $3.00; American Standard B2.2-1960 at $3.50.

AMERICAN STANDARDS

Just Published . . .

If your company is a member of the American Standards Association, it is entitled to receive membership service copies of these newly published American Standards. The ASA contact in your company receives a bimonthly announcement of new American Standards, which also serves as an order form. Find out who your ASA contact is and order your American Standards through him. He will make sure your company receives the service to which it is entitled.

BUILDING AND CONSTRUCTION

Fire Tests of Door Assemblies, Methods of, ASTM E 152-58; ASA A2.2-1960 (Revision of ASTM E 152-55T; ASA A2.2-1956) $0.30

Applicable to door assemblies of various materials and types of construction, for use in wall openings to retard the passage of fire.

Sponsors: National Bureau of Standards; National Fire Protection Association; American Society for Testing Materials

Polysulfide Base Sealing Compounds for the Building Trade, Specification for, A116.1-1960 $1.00

Covers performance properties of polysulfide-base sealing compounds, including curing agents, in sealing, caulking, or glazing applications in buildings.

ELECTRIC AND ELECTRONIC

Plastics and Electrical Insulating Materials for Testing, Methods of Conditioning, ASTM D 618-58; ASA C59.28-1960 (Revision of ASTM D 618-54; ASA C59.28-1955) $0.30

Defines procedures for conditioning plastics and electrical insulating materials (although not necessarily to equilibrium) prior to testing, and the conditions under which they shall be tested.

Sponsor: American Society for Testing Materials

MATERIALS AND TESTING

Quicklime for Structural Purposes, Specification for, ASTM C 5-59; ASA K67.1-1960 $0.30

Covers all classes of quicklime, such as crushed lime, granular lime, ground lime, lump lime, pebble lime, and pulverized lime, used for structural purposes.

Normal Finishing Hydrated Lime, Specification for, ASTM C 6-49; ASA K67.2-1960 $0.30

Covers one type of finishing hydrated lime which is suitable for use in scratch, brown and finish coats of plaster, for stucco, mortar, and as an addition to portland-cement concrete.

Chemical Analysis of Limestone, Quicklime, and Hydrated Lime, Methods of, ASTM C 25-58; ASA K67.3-1960 $0.30

Test procedures for chemical analysis of limestone, quicklime, and hydrated lime.

Quicklime and Hydrated Lime for Cooking of Rags in Paper Manufacture, Specification for, ASTM C 45-25; ASA K67.4-1960 $0.30

General requirements; chemical composition; methods of testing; sampling and inspection.

Quicklime for Sulfite Pulp Manufacture, Specification for, ASTM C 46-27; ASA K67.5-1960 $0.30

General requirements; chemical composition; methods of testing.

Quicklime and Hydrated Lime for Silica Brick Manufacture, Specification for, ASTM C 49-57; ASA K67.6-1960 $0.30

General requirements; chemical composition; physical properties; methods of test; sampling and inspection.

Sampling, Inspection, Packing, and Marking of Lime and Limestone Products, Methods of, ASTM C 50-57; ASA K67.7-1960 $0.30

Procedures for sampling, inspection, rejection, retesting, packing and marking of lime and lime products and of limestone as it may be used in chemical, agricultural, and process industries.

Definitions of Terms Relating to Lime, ASTM C 51-47; ASA K67.8-1960 $0.30

Definitions of lime, quicklime, run-of-kiln quicklime, quicklime sizes, lump lime, lump lime screened, pulverized lime, hydrated lime, hydraulic hydrated lime, high-calcium hydraulic hydrated lime, liming material, air-slaked lime, calcia, magnesia, building and agricultural lime.

Quicklime and Hydrated Lime for Water Treatment, Specification for, ASTM C 53-52T; ASA K67.9-1960 $0.30

Lime suitable for use in purification and softening of water for municipal and industrial supplies.

Physical Testing of Quicklime and Hydrated Lime, Methods of, ASTM C 110-58; ASA K67.10-1960 $0.30

Test methods for quicklime and hydrated lime for residue, standard consistency and plasticity of lime putty;

soundness, water retention, and settling rate of hydrated lime.

Hydraulic Hydrated Lime for Structural Purposes, Specification for, ASTM C 141-55; ASA K67.11-1960 $0.30

Hydrated hydraulic lime to be used for scratch or brown coat of plaster, stucco, mortar, and as sole cementitious material in concrete or in portland-cement concrete, either as blend, amendment, or admixture.

Special Finishing Hydrated Lime, Specification for, ASTM C 206-49; ASA K67.12-1960 $0.30

Specifications covering one type of finishing hydrated lime suitable for use in scratch, brown, and finish coats of plaster, for stucco, mortar, and as an addition to portland-cement concrete. Lime sold under these specifications shall be designated as Type S.

Hydrated Lime for Masonry Purposes, Specification for, ASTM C 207-49; ASA K67.13-1960 $0.30

Covers two types of hydrated lime suitable for use in mortar, in scratch and brown coats of plaster, for stucco, and for addition to portland-cement concrete.

Quicklime for Calcium Carbide Manufacture, Specification for, ASTM C 258-52; ASA K67.14-1960 $0.30

General requirements; chemical composition; methods of testing; sampling and inspection.

Hydrated Lime for Grease Manufacture, Specification for, ASTM C 259-52; ASA K67.15-1960 $0.30

Suitable for use in manufacture of lubricating greases. Covers general requirements, chemical composition, fineness, methods of testing, sampling, and inspection.

Fly Ash for Use as a Pozzolanic Material with Lime, Specification for, ASTM C 379-56T; ASA K67.16-1960 $0.30

Specifications covering fly ash as a pozzolan for use with lime. Defines fly ash, pozzolan, and lime. Requirements for packaging and marking; storage and inspection; rejection and sampling.

Quicklime and Hydrated Lime for Neutralization of Waste Acid, Methods of Testing, ASTM C 400-57T; ASA K67.-17-1960 $0.30

Specifies apparatus to be used; purity of reagents; preparation of sample; procedure; calculation, neutralization curves; lime requirement curve; and neutralization coefficient.

Pozzolans for Use with Lime, Specification for, ASTM C 432-59T; ASA K67.-19-1960 $0.30

Specifications covering pozzolans that in natural state exhibit pozzolanic properties such as some volcanic ash and lava deposits; and pozzolans produced by calcination of natural siliceous or alumino-siliceous earths.

Quicklime and Hydrated Lime for Hypochlorite Bleach Manufacture, Specification for, ASTM C 433-59T; ASA K67.-20-1960 $0.30

General requirements; chemical composition; methods of test; sampling and inspection.

Sponsor: American Society for Testing Materials

MECHANICAL

Involute Splines, Serrations, and Inspection, B5.15-1960 (Revision of B5.15-1950; B5.26-1950; B5.3-1953) $5.00

Provides guidance and data for the design and inspection of straight (nonhelical) involute splines and serrations; gives dimensions of splines and serrations having recommended pitches; and describes manufacturing errors and their effect on fit.

Sponsors: American Society of Tool and Manufacturing Engineers; Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builders' Association; American Society of Mechanical Engineers

In Process . . .

As of October 19, 1960

Standards Council gives final approval to American Standards. Board of Review acts for Standards Council (takes about 2 weeks). Standards Board approves standards to send to Board of Review or Standards Council (takes about 4 weeks).

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

In Standards Board

Electroacoustical Characteristics of Hearing Aids, Methods for Measurement, S3.3- (Revision of Z24.14-1953)

Sponsor: Acoustical Society of America

BUILDING AND CONSTRUCTION

In Standards Board

Installation of Ceramic Tile with Dry-Set Portland Cement Mortar (Including Requirements of Related Divisions), Specification for, A108.5-

Sponsor: Tile Council of America

Withdrawal Being Considered

Coal-Tar Pitch for Steep Built-Up Roofs, Specifications for, ASTM D 654-49; ASA A109.7-1955

Sponsor: American Society for Testing Materials

CINEMATOGRAPHY

In Board of Review

Cross-Modulation Tests for 16mm Variable-Area Photographic Sound Prints, PH22.52- (Revision of PH22.52-1954)

Sound Records and Scanning Area of Double Width Push-Pull Sound Prints, Normal Centerline Type, PH22.69- (Revision of PH22.69-1948)

Sound Records and Scanning Area of Double Width Push-Pull Sound Prints, Offset Centerline Type, PH22.70- (Revision of PH22.70-1948)

Spectral Diffuse Density of Photographic Sound Record on Three-Component Subtractive Color Films, PH22.117-

Sponsor: Society of Motion Picture and Television Engineers

ELECTRIC AND ELECTRONIC

American Standard Approved

Specialty Transformers, Requirements and Terminology for, C89.1-1960 (Revision of C89.1-1957)

Sponsor: National Electrical Manufacturers Association

In Standards Board

Rubber and Thermoplastic Insulated Wire and Cable, Methods of Testing, ASTM D 470-59T; ASA C8.22- (Revision of ASTM D 470-52T; ASA C8.-22-1954)

Synthetic Rubber Insulation for Wire and Cable, 60 C Operation, Specification for, ASTM D 755-58; ASA C8.23- (Revision of ASTM D 755-52T; ASA C8.23-1954)

Synthetic Rubber Insulation for Wire and Cable, 75 C Operation, Specification for, ASTM D 754-58; ASA C8.24- (Revision of ASTM D 754-52T; ASA C8.24-1954)

Natural Rubber Sheath for Wire and Cable, Specification for, ASTM D 532-58; ASA C8.25- (Revision of ASTM D 532-49; ASA C8.25-1954)

Natural Rubber Performance Insulation for Wire and Cable, 60 C Operation, Specification for, ASTM D 353-58; ASA C8.26- (Revision of ASTM D 353-52T; ASA C8.26-1954)

Natural Rubber Heat-Resisting Insulation for Wire and Cable, 75 C Operation, Specification for, ASTM D 469-58; ASA C8.27- (Revision of ASTM D 469-52T; ASA C8.27-1954)

Styrene-Butadiene (SBR) Synthetic Rubber Sheath for Wire and Cable, Specification for, ASTM D 866-58; ASA C8.28- (Revision of ASTM D 866-46T; ASA C8.28-1954)

Ozone-Resisting Insulation for Wire and Cable, Specification for, ASTM D 574-59T; ASA C8.29- (Revision of ASTM D 574-46T; ASA C8.29-1954)

General-Purpose Neoprene Sheath for Wire and Cable, Specification for, ASTM D 753-57T; ASA C8.31- (Revision of ASTM D 753-49; ASA C8.31-1954)

Heavy-Duty Black Neoprene Sheath for Wire and Cable, Specification for, ASTM D 752-57T; ASA C8.32- (Revision of ASTM D 752-49T; ASA C8.-32-1954)

Ozone-Resisting Butyl Rubber Insulation for Wire and Cable, Specification for, ASTM D 1352-59T; ASA C8.37-

Synthetic Rubber Heat- or Moisture-Resisting Insulation for Wire and

Cable, Specification for, ASTM D 1520-58T; ASA C8.38-

Synthetic Rubber Performance, Moisture Resisting Insulation for Wire and Cable, Specification for, ASTM D 1521-58T; ASA C8.39-

Synthetic Rubber Insulation for Wire and Cable, 90 C Operation, Specification for, ASTM D 1523-58T; ASA C8.40-

Sponsor: Electrical Standards Board

Interrupting Rating Factors for Reclosing Service Power Circuit Breakers, C37.7- (Revision of C37.7-1952)

Sponsor: Electrical Standards Board

Reaffirmation Being Considered

Rated Control Voltages and their Ranges, for Power Circuit Breakers, C37.8-1952

Sponsor: Electrical Standards Board

Withdrawal Being Considered

Straight and Offset Resistance-Welding Electrodes and Electrode Holders, C52.3-1945

Controls for Resistance-Welding Machines, C52.4-1945

Resistance-Welding Machines, Specifications for, C52.5-1945

HIGHWAY TRAFFIC

In Standards Board

Method of Recording and Measuring Motor Vehicle Fleet Accident Experience, D15.1-

Method of Recording and Measuring Motor Vehicle Fleet and Passenger Accident Experience, D15.2-

Sponsors: National Safety Council; American Trucking Associations

MECHANICAL

American Standards Approved

Tolerances for Ball and Roller Bearings, B3.5-1960 (Revision of B3.5-1951)

Bearing Mounting for Ball and Roller Bearings, Specifications for, B3.8-1960 (Revision of B3.8-1951)

Sponsor: Anti-Friction Bearing Manufacturers Association

In Board of Review

Gaging Practices for Ball and Roller Bearings, B3.4 (Revision of B3.4-1950)

Sponsor: Anti-Friction Bearing Manufacturers Association

NUCLEAR ENERGY

American Standard Approved

Radiation Protection in Uranium Mines and Mills (Concentrators), N7.1-1960

Sponsors: Atomic Industrial Forum; National Safety Council

PETROLEUM PRODUCTS AND LUBRICANTS

In Standards Board

Cone Penetration of Lubricating Grease, Test for, ASTM D 217-60; ASA Z11.3- (Revision of ASTM D 217-52T; ASA Z11.3-1952)

Water and Sediment in Crude Oils by Centrifuge, Method of Test for, ASTM D 96-60; ASA Z11.8- (Revision of ASTM D 96-59T; ASA Z11.8-1960)

Melting Point of Petrolatum and Microcrystalline Wax, Method of Test for, ASTM D 127-60; ASA Z11.22- (Revision of ASTM D 127-49; ASA Z11.22-1949)

Knock Characteristics of Motor Fuels Below 100 Octane Number by the Motor Method, Method of Test for, ASTM D 357-60; ASA Z11.37- (Revision of ASTM D 357-59; ASA Z11.37-1960)

Unsulfonated Residue of Petroleum Plant Spray Oils, Method of Test for, ASTM D 483-60T; ASA Z11.41- (Revision of ASTM D 483-52T; ASA Z11.41-1952)

Congealing Point of Petrolatum and Petroleum Waxes, Method of Test for, ASTM D 938-60; ASA Z11.61- (Revision of ASTM D 938-59; ASA Z11.61-1949)

Knock Characteristics of Motor Fuels Below 100 Octane Number by the Research Method, Method of Test for, ASTM D 908-60; ASA Z11.69- (Revision of ASTM D 908-59; ASA Z11.69-1960)

Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, Method of Test for, ASTM D 1019-60T; ASA Z11.71- (Revision of ASTM D 1019-58T; ASA Z11.71-1958)

Rust Preventing Characteristics of Steam-Turbine Oil in the Presence of Water, Test for, ASTM D 665-60; ASA Z11.-85- (Revision of ASTM D 665-54; ASA Z11.85-1955)

Kinematic Viscosity, Method of Test for, ASTM D 445-60; ASA Z11.107-

Sulfur in Petroleum Products and LP-Gas (Lamp Method), Method of Test for, ASTM D 1266-59; ASA Z11.108-

Measuring Color of Petroleum Products, Method of Test for, ASTM D 1500-58T; ASA Z11.109-

Sponsor: American Society for Testing Materials

Reaffirmation Being Considered

Distillation of Natural Gasoline, Method of Test for, ASTM D 216-54; ASA Z11.11-1955

Burning Quality of Kerosine, Method of Test for, ASTM D 187-49; ASA Z11.-17-1949

Burning Quality of Mineral Seal Oil, Method of Test for, ASTM D 239-30; ASA Z11.18-1930

Burning Quality for Long-Time Burning Oil for Railway Use, Method of Test for, ASTM D 219-36; ASA Z11.19-1936

Precipitation Number of Lubricating Oils, Method of Test for, ASTM D 91-52; ASA Z11.30-1952

API Gravity of Petroleum and its Products (Hydrometer Method), Method of Test for, ASTM D 287-55; ASA Z11.31-1955

Distillation of Crude Petroleum, Method of Test for, ASTM D 285-54T; ASA Z11.32-1955

Saybolt Color of Refined Petroleum Products (Saybolt Chromometer Method), Method of Test for, ASTM D 156-53T; ASA Z11.35-1953

Viscosity-Temperature Charts for Liquid Petroleum Products, ASTM D 341-43; ASA Z11.39-1943

Stoddard Solvent, Specifications for, ASTM D 484-52; ASA Z11.42-1952

Calculating Viscosity Index, Method for, ASTM D 567-53; ASA Z11.45-1953

Method for Conversion of Kinematic Viscosity to Saybolt Universal Viscosity, ASTM D 446-53; ASA Z11.46-1953

Carbonizable Substances in White Mineral Oil (Liquid Petrolatum), Method of Test for, ASTM D 565-45; ASA Z11.49-1945

Carbonizable Substances in Paraffin Wax, Method of Test for, ASTM D 612-45; ASA Z11.50-1945

Chemical Analysis for Metals in Lubricating Oils, Methods of, ASTM D 811-48; ASA Z11.56-1949

Density and Specific Gravity of Hydrocarbon Liquids by Lipkin Bicapillary Pycnometer, Method of Test for, ASTM D 941-55; ASA Z11.62-1955

Oxidation Stability of Gasoline (Induction Period Method), Method of Test for, ASTM D 525-55; ASA Z11.63-1955

Interfacial Tension of Oil Against Water by the Ring Method, Test for, ASTM D 971-50; ASA Z11.64-1950

Oxidation Stability of Lubricating Greases by the Oxygen Bomb Method, Test for, ASTM D 942-50; ASA Z11.65-1950

Saponification Number of Petroleum Products (Potentiometric Titration Method), Method of Test for, ASTM D 939-54; ASA Z11.67-1955

Benzene and Toluene by Ultraviolet Spectro-Photometry, Method of Test for, ASTM D 1017-51; ASA Z11.70-1951

Sodium in Lubricating Oils and Lubricating Oil Additives, Method of Test for, ASTM D 1026-51; ASA Z11.73-1951

Separation of Residue from Butadiene, Method of Test for, ASTM D 1023-52; ASA Z11.75-1952

Nonvolatile Residue of Polymerization Grade Butadiene, Method of Test for, ASTM D 1025-52; ASA Z11.76-1952

Acidity of Residue from Distillation of Gasoline and of Petroleum Solvents, Method of Test for, ASTM D 1093-52; ASA Z11.77-1952

Boiling Point Range of Polymerization Grade Butadiene, Method of Test for, ASTM D 1088-53; ASA Z11.80-1953

Specific Gravity of Petroleum and its Products (Hydrometer Method), Method of Test for, ASTM D 1298-55; ASA Z11.84-1955

Aromatic Hydrocarbons in Olefin-Free Gasoline by Silica Gel Adsorption, Method of Test for, ASTM D 936-55; ASA Z11.86-1955

Oxidation Characteristics of Inhibited Steam-Turbine Oils, Method of Test for, ASTM D 943-54; ASA Z11.87-1955

Measurement of Freezing Points of High-Purity Compounds for Evaluation of Purity, Method of Test for, ASTM D 1015-55; ASA Z11.88-1955

Determination of Purity from Freezing Points of High-Purity Compounds, Method of Test for, ASTM D 1016-55; ASA Z11.89-1955

Oxygen in Butadiene Vapors (Manganous Hydroxide Method), Method of Test for, ASTM D 1021-55; ASA Z11.90-1955

Sampling Liquefied Petroleum Gases, Method of, ASTM D 1265-55; ASA Z11.91-1955

Vapor Pressure of Liquefied Petroleum Gases, Method of Test for, ASTM D 1267-55; ASA Z11.92-1955

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

In Standards Board

Micro-Opaques, Specifications for, PH5.5-

Sponsor: American Library Association

SAFETY

In Board of Review

Safety Requirements for Storage and Handling of Anhydrous Ammonia, K61.1-

Sponsor: Compressed Gas Association

Maximal Acceptable Concentration of Benzene, Z37.4- (Revision of Z37.4-1941)

Maximal Acceptable Concentration of Xylene, Z37.10- (Revision of Z37.-10-1948)

Maximal Acceptable Concentration of Toluene, Z37.12- (Revision of Z37.12-1943)

Sponsor: American Industrial Hygiene Association

AMERICAN STANDARDS PROJECTS

Dimensional Coordination of Building Products and Materials, A62—

Sponsors: American Institute of Architects; Associated General Contractors of America; National Association of Home Builders; Producers' Council

Reactivated subcommittees will start work to develop modular standards for masonry units, prefabricated masonry panels, and windows. This was the decision at a reactivation meeting of Sectional Committee A62, held July 25 and 26 at the Housing Center in Washington, D.C. C.E. Silling of C. E. Silling & Associates, Charleston, West Virginia, chairman of the committee, presided.

A large part of the meeting was devoted to discussion of the subjects for which subcommittees had previously been authorized by the A62 executive committee. The purpose of the discussion was to determine which standard would result in the greatest benefit and which hold the greatest interest for the industry. The complete list of subcommittees follows:

1. Manufactured masonry units (structural clay products, concrete, gypsum, and masonry made of concrete, including cast stone)
2. Doors (metal and wood doors, as well as doors with any other materials that may be used in buildings)
3. Windows (metal and wood windows, and their accessories)
4. Natural stones (exterior and interior)
5. Prefabricated masonry panels
6. Structural wood
7. Structural steel
8. Miscellaneous metal products (except doors and windows)
9. Glass products
10. Domestic kitchen and laundry equipment (both appliances and cabinets)
11. Manufactured toilet partitions and shower stalls
12. Coordinated ceilings
13. Structural concrete

In addition, John Seldon, Autoclave Building Products Association, suggested that modular standards for precast masonry will be needed, particularly prestressed, double T floor and roof slabs, modular window frames, and similar precast elements. Mr Seldon had returned from Europe recently where he had been impressed with the fact that cast stone is produced in units of 4 inches, fitting in with American inch dimensions. He had found that this was due to the fact that many of the European countries have adopted the 10-centimeter module as their standard. Mr Seldon believes that prefabricated units and sections will be in greater demand in this country as well as in Europe in the near future.

In opening the meeting, Mr Silling commented, "This committee has suffered from a lack of financing rather than a lack of opportunity for work."

Representatives of the sponsor organizations pointed to the organization of the Modular Building Standards Association as a means of supporting the work needed to provide modular standards and to see that the necessary information is made available to put the modular program into effect. MBSA is now making available a series of slides to be used by schools of architecture and engineering in introducing the subject of modular dimensioning, and is providing a series of reference drawings for student use in architectural practice courses. This series will be published in each issue of *MBSA Reports*. Also, plans are under way for a comprehensive textbook on the subject of modular dimensioning.

The work of the International Organization for Standardization was also considered at the meeting. Modular dimensioning is being handled by Subcommittee 1 of ISO/TC 59 on building construction. The Housing and Home Finance Agency has asked the American Standards Association to participate in the ISO work on modular dimensioning. A draft proposal toward establishment of 10 centimeters/4 inches as the recommended international standard module is now before the members of ISO/TC 59. A letter ballot of Sectional Committee A62 is being taken to determine whether it is their recommendation that ASA participate in the work of ISO/TC 59 SC 1.

Vertical Turbine Pumps, B58—

Sponsor: American Water Works Association

Originally the work of this committee was restricted to deep-well vertical pumping equipment. Now, however, the scope has been changed to reflect the fact that this restriction is no longer in effect. The project now covers: "The standardization of materials and dimensions for the head-and-driver assembly, the column-shaft assembly or conductor system, and the pump unit proper, of vertical pumping equipment designed for lifting water at normal temperature from underground sources; and the standardization of capacity ratings for such pumping equipment."

Automation—

The conference held September 20 to discuss the possibility of starting American Standards projects for automation methods and equipment decided to appoint a small committee to consider the views expressed at the conference. The committee is to prepare a report to be submitted to a second conference.

The work has been suggested as a means of avoiding development of a multiplicity of standards in the new field of automation.

Mechanical Shock and Vibration, S2—

Sponsors: Acoustical Society of America; American Society of Mechanical Engineers

The work of Writing Group S2-W-28 has been successfully completed resulting in the publication of the new American Standard Method for Specifying the Characteristics of Auxiliary Equipment for Shock and Vibration Measurements, S2.4-1960. The September issue of *The Magazine of Standards* contained an article by C.S. Duckwald describing the standard and explaining its function. Due to an oversight both in the Foreword to the standard and in the subsequent article, approximately one-half of the writing group members were not included in the membership list. The complete membership and their affiliation at the time the standard was completed is as follows: Dr R.O. Fehr, General Engineering Laboratory, General Electric Company, Schenectady, N.Y., *initial chairman;* C.S. Duckwald, General Engineering Laboratory, General Electric Company, Schenectady, N.Y., *chairman;* Dr J.C. Johnson, Willow Run Research Center, University of Michigan, Ypsilanti, Mich; S. Levey, General Engineering Laboratory, General Electric Company, Schenectady, N.Y.; Greer Ellis, Ellis Associates, Pelham, N.Y.; Irwin Vigness, Naval Research Laboratory, Washington, D.C.; Karl Unholtz, Unholtz-Dickie Corporation, Hamden, Conn; Fred Mintz, Lockheed Aircraft Corporation, California Division, Burbank, Calif; J. J. McDonald, Consolidated Electrodynamics Corporation, Pasadena, Calif; T.J. Keane, Radio Shack Corporation, Boston, Mass.; E.E. Gross, Jr, General Radio Company, Cambridge, Mass.; W.R. Saylor, General Radio Company, Silver Spring, Md; E.G. Fischer, Research Laboratories, Westinghouse Electric Corporation, Pittsburgh, Pa.; R.T. McGoldrick, Navy Department, David Taylor Model Basin, Washington, D.C.; Wilson Bradley, Jr, Endevco Corporation, Pasadena, Calif; H.M. Trent, Applied Mathematics Branch, Naval Research Laboratory, Washington, D.C.

Graphical Symbols and Designations, Y32—

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

Because the development of acceptable logic symbols has not kept pace with the use of electronic data-processing equipment by both the military and industry, a serious state of emergency now exists. This was the basis for calling together on September 8, 1960, individuals representing the many groups working in this area to consider the desirability of forming a task group under ASA Sectional Committee Y32 to propose a solution. A. F. Pomeroy, chairman of Y32, called the meeting which was attended by representatives from the Association of Computer Manufacturers, the American Institute of Electrical Engineers, the Air Force, BuShips, Department of Defense (Standardization Division), Institute of Radio Engineers, the National Electrical Manufacturers Association, and the Telephone Group. After considering proposals and arguments presented by the different representatives, agreement was reached that an ASA task group should be formed. The group was so designated by Mr Pomeroy and went to work. Special attention was given to a proposal prepared by AIEE Subcommittee on Logic and Switching Circuit Theory. This was AIEE District Paper DP60-760, now upgraded to AIEE Transaction Paper 60-1224. The logic symbology proposed in this paper had been the basis of a coordinated Air Force standard, MIL-STD-806 (USAF), Graphical Symbols for Logic Diagrams, which reportedly is at present contractually required under several USAF procurements.

A proposed American Standard based on the discussions of the task group at its meeting was circulated for letter ballot of the group on September 15, 1960.